

**Collection of Materials Related to
the Pilgrim Nuclear Power Station
License Renewal Application
Review, 2006**

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Contents – as compiled by Debbie Killory, Duxbury Free Library, 2006-2007.

To Branch Chief, License Renewal Branch A, Division of License Renewal, Office of Nuclear Reactor Regulation (June 30, 2006) Forthcoming Exit Meeting with Entergy Nuclear Operation, Inc. on License Renewal Scoping and Screening Methodology and the Aging Management Program/Aging Management Review Audits for PNPS;

(July 13, 2006) Summary of Public Scoping Meetings Conducted Related to the Review of the PNPS, License Renewal Application (TAC NO. MC9676);

(July 25, 2006) Summary of Conferences Calls with Entergy Nuclear Operations, Inc., to Discuss the Severe Accident Mitigation Alternatives Requests for Additional Information for PNPS (TAC NO. MC9676);

(July 25, 2006) Summary of Environmental Site Audit Related to the Review of the License Renewal Application for PNPS (TAC NO. MC9676);

To Entergy Nuclear Operations, Inc., (July 25, 2006) Request for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Section 2.5 and 2.1 - Scoping and Screening Methodology;

To Entergy Nuclear Operations, Inc., (July 26, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Section 2.3.3.9 & 10 - Fire Protection System;

To Entergy Nuclear Operations, Inc., (July 31, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Section 2.5;

To Entergy Nuclear Operations, Inc., (July 31, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Sections 2.3.1, 2.3.2 and 2.3.3;

To Entergy Nuclear Operations, Inc., (July 31, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Balance-of-Plant Components;

To Entergy Nuclear Operations, Inc., (July 31, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Sections B.1.3, B.1.26 and 4.2.1;

To Entergy Nuclear Operations, Inc., (August 14, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Sections 3.5 Structures and Component Supports and 3.6 Electrical and Instrumentation and Control Systems;

(August 15, 2006) Summary of Public Audit Status Briefing with Entergy Nuclear Operations, Inc. on License Renewal Scoping and Screening Methodology and the Aging Management Program and the Aging Management Review Audits for the PNPS (TAC NO. MC9669);

To Entergy Nuclear Operations, Inc., (August 22, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Section 2.4 Scoping and Screening Results: Structures;

(August 23, 2006) Summary of Follow Up Conference Call with Entergy Nuclear Operations, Inc., to Discuss the Severe Accident Mitigation Alternatives Requests for Additional Information for PNPS (TAC NO. MC9676);

(August 25, 2006) Summary of Conference Call on August 1, 2006 with Entergy Nuclear Operations, Inc., on Potential Time Limited Aging Analysis Questions on the Pilgrim License Renewal Application (TAC NO. MC9669); To Entergy Nuclear Operations, Inc.,

(September 7, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Section: 4.3.1.2 Reactor Vessel Internals;

To Entergy Nuclear Operations, Inc., (September 8, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Sections 3.2 Engineered Safety Features Systems;

To Entergy Nuclear Operations, Inc., (September 8, 2006) Requests for Additional Information for the Review of the PNPS License Renewal Application (TAC MC9669) Time-Limited Aging Analysis (TLAA) of Reactor Vessel (RV) Internals Section: 4.2.1 Neutron Fluence.

To Entergy Nuclear Operations, Inc., (September 26, 2006) Issuance of Environmental Scoping Summary Report Associated with the Staff's Review of the Application by Entergy Nuclear Operations, Inc., for renewal of the Operating License for Pilgrim Nuclear Power Station (TAC NO. MC9676).

(October 23, 2006) Summary of Conference Call on October 10, 2006, with Entergy Nuclear Operations, Inc., to Clarify Information Sent to the Nuclear Regulatory Commission in Response to Requests for Additional Information Regarding the Pilgrim License Renewal Application (TAC NO. MC9669).

(October 24, 2006) Summary of Conference Call with Entergy Nuclear Operations, Inc., to Discuss the Severe Accident Mitigation Alternatives Requests for Additional Information for Pilgrim Nuclear Power Station (TAC NO. MC9676).

To Entergy Nuclear Operations, Inc., (November 2, 2006) Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669).

4. The fourth part of the document discusses the implications of the findings. It suggests that the results have significant implications for the field of study and may lead to further research in this area.

5. The fifth part of the document concludes the study. It summarizes the key findings and provides a final statement on the importance of the research. The author expresses gratitude to the funding agency and the participants.

6. The sixth part of the document includes a list of references. It cites the works of other researchers in the field, providing a context for the current study. The references are listed in alphabetical order.

7. The seventh part of the document includes a list of appendices. It provides additional information that supports the main text of the document. The appendices are organized into separate sections.

8. The eighth part of the document includes a list of figures. It provides a visual representation of the data presented in the study. The figures are labeled and described in detail.

9. The ninth part of the document includes a list of tables. It provides a tabular representation of the data presented in the study. The tables are labeled and described in detail.

10. The tenth part of the document includes a list of footnotes. It provides additional information that is not included in the main text of the document. The footnotes are numbered and clearly identified.

11. The eleventh part of the document includes a list of acknowledgments. It provides a place for the author to thank the individuals and organizations that have supported the research. The acknowledgments are written in a formal and respectful tone.

(November 7, 2006) Summary of Conference Call on September 25, 2006, with Entergy Nuclear Operations, Inc., to Discuss Information Noted by the NRC's Pilgrim Audit Team and to Clarify Information Sent to the U.S. Nuclear Regulatory Commission in Response to Requests for Additional Information Regarding the Pilgrim License Renewal Application (TAC No. MC9669).

To Entergy Nuclear Operations, Inc., (November 7, 2006) Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669).

To Entergy Nuclear Operations, Inc., (November 28, 2006) Request for Additional Information Regarding Severe Accident Mitigation Alternatives for Pilgrim Nuclear Power Station (TAC No. MC9676).

Generic Environmental Impact State for License Renewal of Nuclear Plants, NUREG 1437, Supplement 29, Regarding Pilgrim Nuclear Power Station, Draft Report for Comment, U.S. Nuclear Regulatory Commission.

(December 8, 2006) Notice of Availability of the Draft Plant-Specific Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Pilgrim Nuclear Power Station.

To Entergy Nuclear Operations, Inc., (December 8, 2006) Notice of Availability of the Draft Plant-Specific Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Pilgrim Nuclear Power Station (TAC NOS. MC9676).

To Assistant Regional Administrator for Habitat Conservation, National Marine Fisheries Service, Northeast Regional Office (December 8, 2006) Biological Assessment and Essential Fish Habitat Assessment for License Renewal of Pilgrim Nuclear Power Station (TAC NO. MC 9676).

(December 29, 2006) Summary of Conference Call on December 12, 2006, with Entergy Nuclear Operations, Inc., Regarding the Pilgrim License Renewal Application (TAC NO. MC9669).

To Environmental Branch B, Division of License Renewal, Office of Nuclear Reactor Regulation (January 8, 2007) Forthcoming Meeting to Discuss the Draft Supplemental Environmental Impact Statement for the License Renewal of Pilgrim Nuclear Power Station.

(January 18, 2007) Summary of Conference Call on December 18, 2006, with Entergy Nuclear Operations, Inc., Regarding the Pilgrim Nuclear Power Station License Renewal Application (TAC NO. MC9669).

To Entergy Nuclear Operations, Inc., (February 2, 2007) Audit and Review Report for Plant Aging Management Reviews and Programs for the Pilgrim Nuclear Power Station License Renewal Application (TAC NO. MC9669).

(February 16, 2007) Summary of Conference call on January 23, 2007, with Entergy Nuclear Operations, Inc., regarding the Pilgrim license renewal application (TAC NO. MC9669).

(March 1, 2007) Summary of public meetings on the draft supplemental environmental impact statement regarding the Pilgrim Nuclear Power Station, license renewal review (TAC NO. MC9676).

To Entergy Nuclear Operations, Inc., (March 1, 2007) Safety Evaluation Report with Open Items related to the License Renewal of Pilgrim Nuclear Power Station;.

(March 1, 2007) CD-ROM of License Renewal Safety Evaluation Report, Pilgrim Nuclear Power Station, ML 070600798, Docket No. 50-293.

(March 15, 2007) Summary of conference call on February 26, 2007, with Entergy Nuclear Operations, Inc., regarding the Pilgrim license renewal application (TAC NO. MC9669).

To Entergy Nuclear Operations, Inc., (March 26, 2007) Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application.

(April 27, 2007) Summary of Conference Calls on April 2, 2007, with Entergy Nuclear Operations, Inc., Regarding the Pilgrim License Renewal Application (TAC No. MC9669).

(May 1, 2007) Summary of Conference Calls on March 14, 2007, and March 15, 2007, with Entergy Nuclear Operations, Inc., Regarding the Pilgrim License Renewal Application (TAC No. MC9669).

(June 8, 2007) Summary of Telephone Conference Call Held on May 10, 2007, between the U.S. Nuclear Regulatory Commission and Entergy Nuclear Operations, Inc., Concerning Open Items Pertaining to the Pilgrim Nuclear Power Station, License Renewal Safety Evaluation Report.

(June 28, 2007) CD-ROM of License Renewal Safety Evaluation Report, Pilgrim Nuclear Power Station, ML 071410455, Docket No. 50-293.

To Entergy Nuclear Operations, Inc., (June 28, 2007) Safety Evaluation Report Related to the License Renewal of Pilgrim Nuclear Power Station.

(July 26, 2007) Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application.

1. Introduction

2. Background

3. Methodology

4. Results

5. Discussion

6. Conclusion

7. References

8. Appendix

9. Acknowledgments

10. Contact Information

11. Disclaimer

12. Glossary

To U.S. Environmental Protection Agency, Office of Federal Activities, NEPA Compliance Division, EIS Filing Section (July 26, 2007) Final Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Pilgrim Nuclear Power Station (TAC NO. MC9676).

To Entergy Nuclear Operations, Inc., (July 26, 2007) Notice of Availability of the Final Plant-Specific Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Pilgrim Nuclear Power Station (TAC NO. MC9676).

Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 29, Regarding Pilgrim Nuclear Power Station, Final Report – Main Report, Vols. 1 and 2.

(August 31, 2007) Summary of Telephone Conference Call Held on August 23, 2007, between the U.S. Nuclear Regulatory Commission and Entergy Nuclear Operations, Inc., Concerning Requests for Additional Information Pertaining to the Pilgrim Nuclear Power Station License Renewal Application.

(September 7, 2007) Summary of Telephone Conference Call Held on August 30, 2007, between the U.S. Nuclear Regulatory Commission and Entergy Nuclear Operations, Inc., Commitment No. 47 Pertaining to the Pilgrim Nuclear Power Station License Renewal Application.

To Entergy Nuclear Operations, Inc., (September 27, 2007) Supplemental Safety Evaluation Report Related to the License Renewal of Pilgrim Nuclear Power Station.

(September 27, 2007) CD-ROM of SUPPLEMENT 1: LICENSE RENEWAL Safety Evaluation Report September 2007, Pilgrim Nuclear Power Station ML 072210487 Docket No.: 50-293.

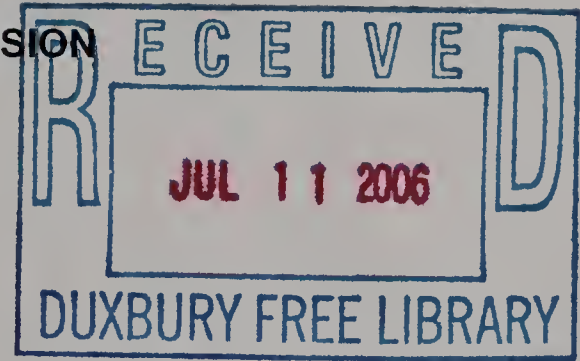
4. The fourth part of the document discusses the consequences of failing to maintain accurate records. It states that individuals or organizations that fail to comply with the record-keeping requirements may be subject to fines and penalties.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 30, 2006



MEMORANDUM TO: Louise Lund, Branch Chief
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

FROM: Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

A handwritten signature in black ink, appearing to read "S. Subbaratnam", written over the typed name in the "FROM:" field.

SUBJECT: FORTHCOMING EXIT MEETING WITH ENTERGY NUCLEAR
OPERATIONS, INC., ON LICENSE RENEWAL SCOPING AND
SCREENING METHODOLOGY AND THE AGING MANAGEMENT
PROGRAM / AGING MANAGEMENT REVIEW AUDITS FOR PILGRIM
NUCLEAR POWER STATION

DATE & TIME: Wednesday, July 19, 2006
9:00 a.m. - 12:00 p.m.

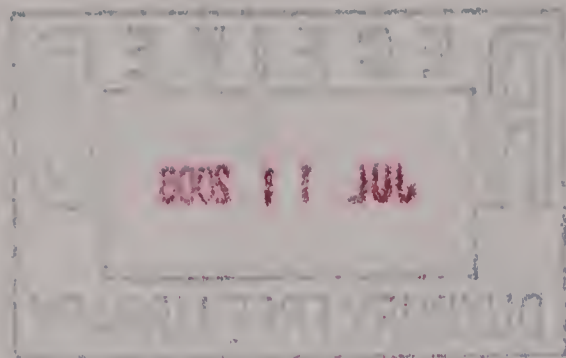
LOCATION: Radisson Hotel Plymouth Harbor
Duxbury Room
180 Water Street
Plymouth, MA 02360

PURPOSE: To summarize the staff's audit findings associated with the scoping and
screening methodology and the Aging Management Program / Aging
Management Review of the Pilgrim Nuclear Power Station license
renewal application. A copy of the license renewal application is available
on NRC's Web site at [http://www.nrc.gov/reactors/operating/licensing/
renewal/applications.html](http://www.nrc.gov/reactors/operating/licensing/renewal/applications.html).

CATEGORY 1:* This is a Category 1 Meeting. The public is invited to observe this
meeting and will have one or more opportunities to communicate with the
NRC staff after the business portion, but before the meeting is adjourned.

CONTACT: Ram Subbaratnam, NRR
301-415-1478
rxs2@nrc.gov

*Commission's Policy Statement on "Enhancing Public Participation in NRC Meetings,"
67 *Federal Register* 36920, May 28, 2002.



L. Lund

-2-

PARTICIPANTS: Participants include members from the NRC's Office of Nuclear Reactor Regulation (NRR) and representatives from Entergy Nuclear Operation, Inc.

NRC/NRR

Ram Subbaratnam
Billy Rogers
James Davis
et al.

Entergy Nuclear Operations, Inc.

Bryan Ford
et al.

Docket No. 50-293

Enclosure:
Proposed Meeting Agenda

cc: See next page

MEETING BETWEEN THE U.S. NUCLEAR REGULATORY
COMMISSION STAFF AND ENTERGY NUCLEAR OPERATIONS, INC
REGARDING LICENSE RENEWAL APPLICATION FOR
THE PILGRIM NUCLEAR POWER STATION

Radisson Hotel Plymouth Harbor
Duxbury Room
180 Water Street
Plymouth, MA 02360

PROPOSED AGENDA
(Times are approximate)

July 19, 2006

- | | | |
|------|---|-------------------------|
| I. | Introduction/Opening remarks | 9:00 a.m. - 9:10 a.m. |
| II. | Presentation of the Scoping and Screening Audit Items | 9:10 a.m. - 9:20 a.m. |
| | Entergy Nuclear Operations, Inc. Staff Questions | 9:20 a.m. - 9:30 a.m. |
| III. | Presentation of the AMP Audit Items | 9:30 a.m. - 9:50 a.m. |
| | Entergy Nuclear Operations, Inc. Staff Questions | 9:50 a.m. - 10:00 a.m. |
| IV. | Presentation of the AMR Audit Items | 10:00 a.m. - 10:20 a.m. |
| | Entergy Nuclear Operations, Inc. Staff Questions | 10:20 a.m. - 10:30 a.m. |
| V. | Public Comments | 10:30 a.m. - 12:00 p.m. |
| VI. | Adjourn | 12:00 p.m. |

ENCLOSURE

Pilgrim Nuclear Power Station

cc:

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Chairman
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Chairman, Duxbury Board of Selectmen
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Duxbury, MA 02332

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One Winter Street
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Director, Radiation Control Program
Commonwealth of Massachusetts
Executive Offices of Health and
Human Services
174 Portland Street
Boston, MA 02114

Secretary of Public Safety
Executive Office of Public Safety
One Ashburton Place
Boston, MA 02108

Director, Massachusetts Emergency
Management Agency
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Duxbury, MA 02332
ATTN: Ms. Elaine Winkvist

Kingston Public Library
6 Green Street
Kingston, MA 02364
ATTN: Reference Librarian



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 13, 2006

LICENSEE: Entergy Nuclear Operations, Inc
FACILITY: Pilgrim Nuclear Power Station
SUBJECT: SUMMARY OF PUBLIC SCOPING MEETINGS CONDUCTED
RELATED TO THE REVIEW OF THE PILGRIM NUCLEAR POWER
STATION, LICENSE RENEWAL APPLICATION (TAC NO. MC9676)

The U.S. Nuclear Regulatory Commission (NRC) staff conducted environmental scoping meetings related to the review of the Pilgrim Nuclear Power Station license renewal application submitted by Entergy Nuclear Operations, Inc. (Entergy). Two public meetings were conducted on Wednesday, May 17, 2006, at the Radisson Hotel Plymouth Harbor Ballroom, 180 Water Street, Plymouth, Massachusetts. Approximately 160 people attended the meetings. The participants included members of the NRC staff, NRC contractors from Earth Tech, members of the public, representatives from Entergy, the news media, and local government officials. Public comments and questions were mainly focused on the license renewal process, safety and emergency preparedness, spent fuel storage and aquatic ecology.

A combined list of participants for both sessions is provided in Enclosure 1. Enclosure 2 is a copy of the meeting handouts which includes the Agenda, Open House Form, Federal Register Notice and a copy of the slides used during the NRC's presentation. The official corrected transcripts for the afternoon and evening meetings are available through the NRC's Agencywide Documents Access and Management Systems (ADAMS) under Accession Nos. ML061700046 and ML061700050 respectively. The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html> on the NRC Web site. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's Public Document Room reference staff at 1-800-397-4209, or 301-415-4737, or by e-mail at pdr@nrc.gov.

A handwritten signature in black ink, appearing to read "Alicia Williamson", is written over a horizontal line.

Alicia Williamson, Project Manager
Environmental Branch B
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:

1. List of Participants
2. Meeting Handouts

cc w/encls: See next page

**LIST OF PARTICIPANTS FOR THE
PILGRIM ENVIRONMENTAL SCOPING MEETINGS**

MAY 17, 2006

Participants

Affiliation

Eric Benner	U.S. Nuclear Regulatory Commission (NRC)
Jennifer Davis	NRC
Richard Emch	NRC
Jason Flemming	NRC
Trish Millican	NRC
Alicia Mullins	NRC
Harriet Nash	NRC
Laura Quinn	NRC
Robert Schaaf	NRC
Alicia Williamson	NRC
P.T. Kuo	NRC
Nathan Craig	Earth Tech
Steve Dillard	Earth Tech
Steve Duda	Earth Tech
Chuck Flynn	Earth Tech
Ed Kaczmarczyk	Earth Tech
Mike Pappalardo	Earth Tech
Andrew Parker	Earth Tech
Mike Spera	Earth Tech
John Szeligowski	Earth Tech
Bobbie Hurley	Earth Tech
Jack Alexander	Entergy Nuclear Operations, Inc. (Entergy)
Steve Bethay	Entergy
Rick Buckley	Entergy
Leonard Curcuru	Entergy
Bryan Ford	Entergy
Jay Scheffer	Entergy
Bob Smith	Entergy
Tom Sowdon	Entergy
Karen Sullivan	Entergy
Dave Tarantino	Entergy
Carol Wichtman	Entergy
Molly Bartlett	Local
Jerry Benezra	Local
Matt Briggs	Local
Sydney Briggs	Local
Frank Collins	Local
Brittany Curcuru	Local

ENCLOSURE 1

**LIST OF PARTICIPANTS FOR THE
PILGRIM ENVIRONMENTAL SCOPING MEETINGS
(CONTINUED)**

MAY 17, 2006

<u>Participants</u>	<u>Affiliation</u>
Chelsea Curcuru	Local
Peter Curley	Local
Megan Dempster	Local
Robert Dole	Local
Doug Ellis	Local
Kate Francini	Local
Pat Garrity	Local
Anne Geller	Local
Robert Hillman	Local
Amanda Ibey	Local
Nancy Landgren	Local
Bill Lang	Local
K. Leslie	Local
David Lybarger	Local
J. Tarney-Manuel	Local
Keith Maxwell	Local
George Obuchon	Local
Arthur Powers	Local
Susan Price	Local
Peter Roveto	Local
Marlene Schwotzer	Local
Mark Serrano	Local
Bob Smith	Local
Phil Steele	Local
William Stone	Local
Alba C. Thompson	Local, Veterans Council
Mary Valliere	Local
Laurent Lawrence	Massachusetts Affordable Reliable Electricity Alliance (Mass AREA)
Dave Leonardi	Mass AREA
Joyce McMahon	Mass AREA
Jim O'Connell	Mass AREA
Bill Stewart	Mass AREA
Sandra Woods	Mass AREA
Becky Chin	Duxbury Nuclear Advisory Committee - Vice Chair
Barbara Rye	Duxbury Nuclear Advisory Committee
Thomas Bott	Plymouth/Kingston Official
Mary Ellen Burns	Town Meeting Representative Plymouth Precinct 13

**LIST OF PARTICIPANTS FOR THE
PILGRIM ENVIRONMENTAL SCOPING MEETINGS
(CONTINUED)**

MAY 17, 2006

<u>Participants</u>	<u>Affiliation</u>
Andre Martecchini	Duxbury Selectmen
Joseph Prall	Town Meeting Member
Paul Smith	Town Meeting Member
Mark Sylvia	Town of Plymouth, Town Manager
John Viveiros	Mass Lead Planner
Linda Benezra	League of Women Voters
Marie Fehlow	League of Women Voters
Jeff Berger	Plymouth Nuclear Matters Committee, CHMN
Richard Rothstein	Plymouth Nuclear Matters Committee
Rick Anderson	Carpenters Local 624
Jim Burba	New England Regional Coordinator of Carpenters
Brian DuBois	Carpenters L.V. 424
Bob Knox	Boston Globe
Casey Meserve	Plymouth Bulletin
Tamara Race	The Patriot Ledger
Julie Ryder	Senator Kennedy Representative
Donna Sorgi	MA Attorney General
Corwne Young	Congressman Delahunt Representative
David Agnew	Cape Downwinders
Joan Bartlett	Open Space
Pine duBois	Jones River Watershed Association
John Hammond	Plymouth Spac Committee
Larry Harrington	MDPH Radiation Coordinator
Janet Humes	Stroup Associates
Mary Lampert	Pilgrim Watch / Duxbury Nuclear Advisory Committee
David Leonard	UWUA 369
Karen Melo	ASL Interpreter
Thomas Nauman	Shaw Stone & Webster
Jim O'Connell	Llennoco, Inc.
Anna Purcell	MCDHH
Robert Ruddock	Associated Industries of Mass
Mary Shevory	Massachusetts Emergency Management Agency
Maureen Thomas	Kingston Conservation
Genevieve Wheeler	Old Colony Memorial
Sheila Hollis	Diane Morris

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**AGENDA FOR PUBLIC MEETING TO DISCUSS
ENVIRONMENTAL SCOPING PROCESS FOR
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION**

WEDNESDAY, MAY 17, 2005

Two Identical Meeting Sessions*: 1:30 p.m. to 4:30 p.m.
7:00 p.m. to 10:00 p.m.

- I. Welcome and Purpose of Meeting - 10 minutes (F. Cameron)
- II. Overview of License Renewal Process - 10 minutes (R. Franovich)
- III. Overview of Environmental Review Process - 20 minutes (R. Schaaf)
- IV. Public Comment - (as required) (F. Cameron)
- V. Closing/Availability of Transcripts, etc. (F. Cameron)

*The NRC staff will host informal discussions one hour prior to each meeting session. No formal comments on the proposed scope of the Environmental Impact Statement (EIS) will be accepted during the informal discussions. To be considered, comments must be provided either at the transcribed public meetings (see agenda, above) or in writing, as described in the attached *Federal Register* Notice.

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**Welcome to the NRC's Open House
Associated with the Environmental Review for
License Renewal at the Pilgrim Nuclear Power Station**

This open house is intended to provide an opportunity for interested members of the public and staff from other Federal, State, and local agencies to interact with the NRC staff in an informal information exchange.

The NRC is gathering information necessary to prepare an Environmental Impact Statement (EIS) in support of the proposed renewal of the operating license for the Pilgrim Nuclear Power Station. Please note that if you wish to provide formal comments regarding the scope of the environmental review for the Pilgrim Nuclear Power Station, they must be presented at either session of today's transcribed public meetings or provided in writing or electronically by June 16, 2006. Comments received after this date will be considered while developing the draft EIS if it is practical to do so, but the NRC staff is able to assure consideration only for comments received on or before June 16, 2006. Written comments on the scope of the EIS should be sent to:

Chief, Rules and Directives Branch
Division of Administrative Services
Office of Administration
Mailstop T-6D 59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Comments may be hand-delivered to the NRC at 11545 Rockville Pike, Rockville, Maryland, between 7:45 a.m. and 4:15 p.m. on Federal workdays. Submittal of electronic comments may be sent by e-mail to the NRC at *PilgrimEIS@nrc.gov*.

Thank you for your participation.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF POLITICAL SCIENCE
INSTITUTE OF POLITICAL ECONOMY

RESEARCH REPORT
NO. 100

THE POLITICAL ECONOMY OF
THE UNITED STATES

BY
J. M. BURNHAM

CHICAGO, ILLINOIS
1960

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF POLITICAL SCIENCE
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RESEARCH REPORT
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1960

Removal of P-T Limits and LTOP [Low-Temperature Overpressure Protection] Setpoints from the Technical Specifications," for the calculation of flaw stress intensity factors due to internal pressure loadings (K_{Im}).

The Need for the Proposed Action

In the associated exemption, the staff has determined that, pursuant to 10 CFR 50.12(a)(2)(ii), the application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule, based on the alternative methodology proposed in the licensee's amendment request. The proposed action would revise the currently-approved methodology for P-T limit calculations to incorporate the methodology approved for use in CE NPSD-683-A, Revision 6. The topical report allows the use of an alternate methodology to calculate the flaw stress intensity factors due to internal pressure loadings (K_{Im}). The exemption is needed because the methodology in CE NPSD-683-A, Revision 6, could not be shown to be conservative with respect to the methodology for the determination of K_{Im} provided in Editions and Addenda of ASME Code, Section XI, Appendix G, through the 1995 Edition and 1996 Addenda (the latest Edition and Addenda of the ASME Code which had been incorporated into 10 CFR 50.55a at the time of the staff's review of CE NPSD-683-A, Revision 6). Therefore, along with the supplement dated January 12, 2006, the licensee submitted an exemption request, consistent with the requirements of 10 CFR 50.60, to apply the K_{Im} calculational methodology of CE NPSD-683-A, Revision 6, as part of the SONGS 2 and 3 pressure temperature limit report (PTLR) methodology.

Environmental Impacts of the Proposed Action

The NRC has completed its evaluation of the proposed action and concludes that the exemption described above would provide an adequate margin of safety against brittle failure of the reactor pressure vessel at SONGS 2 and 3. The details of the staff's safety evaluation will be provided in the exemption to Appendix G, which will allow the use of the methodology in Topical Report CE NPSD-683-A, Revision 6, to calculate the flaw stress intensity factors due to internal pressure loadings (K_{Im}), that will be issued in a future letter to the licensee.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents

that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not have a potential to affect any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

The action does not involve the use of any different resources than those previously considered in the Final Environmental Statement for the SONGS 2 and 3 dated May 12, 1981.

Agencies and Persons Consulted

On March 28, 2006, the staff consulted with the California State official, Steve Hsu of the Department of Health Services, Radiologic Health Branch, regarding the environmental impact of the proposed action. The State official had no comments.

Finding of No Significant Impact

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's exemption letter dated January 28, 2005, as supplemented by letter dated January 12, 2006. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible

electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

Dated at Rockville, Maryland, this 7th day of April 2006.

For the Nuclear Regulatory Commission.
N. Kalyanam,

Project Manager, Plant Licensing Branch IV,
Division of Operating Reactor Licensing,
Office of Nuclear Reactor Regulation.

[FR Doc. 06-3594 Filed 4-13-06; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-293]

Entergy Nuclear Operations, Inc.; Pilgrim Nuclear Power Station; Notice of Intent To Prepare an Environmental Impact Statement and Conduct Scoping Process

Entergy Nuclear Operations, Inc. (Entergy) has submitted an application for renewal of Facility Operating License DPR-35 for an additional 20 years of operation at the Pilgrim Nuclear Power Station (Pilgrim). Pilgrim is located on the western shore of Cape Cod in the Town of Plymouth, Plymouth County, Massachusetts. It is 38 miles southeast of Boston, Massachusetts, and 44 miles east of Providence, Rhode Island.

The operating license for Pilgrim expires on June 8, 2012. The application for renewal was received on January 25, 2006, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) part 54. A notice of receipt and availability of the application, which included the environmental report (ER), was published in the Federal Register on February 6, 2006 (71 FR 6101). A notice of acceptance for docketing of the application for renewal of the facility operating license was published in the Federal Register on March 27, 2006 (71 FR 15222). The purpose of this notice is to inform the public that the U.S. Nuclear Regulatory Commission (NRC) will be preparing an environmental impact statement (EIS) in support of the review of the license renewal application and to provide the public an opportunity to participate in the environmental scoping process, as

defined in 10 CFR 51.29. In addition, as outlined in Title 36 of the *Code of the Federal Regulations* 800.8, "Coordination with the National Environmental Policy Act," the NRC plans to coordinate compliance with section 106 of the National Historic Preservation Act in meeting the requirements of the National Environmental Policy Act of 1969 (NEPA).

In accordance with 10 CFR 51.53(c) and 10 CFR 54.23, Entergy submitted the ER as part of the application. The ER was prepared pursuant to 10 CFR Part 51 and is publicly available for inspection at the NRC Public Document Room (PDR), located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, MD 20852, or from the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the Public Electronic Reading Room on the NRC's Web site at <http://www.nrc.gov/reading-rm/adams/web-based.html>. The Accession Number for the ER is ML060830611. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's PDR reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail at pdrr@nrc.gov. In addition, the Plymouth Public Library, located at 132 South Street, Plymouth, MA 02360 and the Duxbury Free Library, located at 77 Alden Street, Duxbury, MA 02332 have agreed to make the ER available for public inspection.

This notice advises the public that the NRC intends to gather the information necessary to prepare a plant-specific supplement to the Commission's "Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants," (NUREG-1437) related to the review of the application for renewal of the Pilgrim operating license for an additional 20 years. Possible alternatives to the proposed action (license renewal) include no action and reasonable alternative energy sources. The NRC is required by 10 CFR 51.95 to prepare a supplement to the GEIS in connection with the renewal of an operating license. This notice is being published in accordance with National Environmental Policy Act of 1969 (NEPA) and the NRC's regulations found in 10 CFR part 51.

The NRC will first conduct a scoping process for the supplement to the GEIS and, as soon as practicable thereafter, will prepare a draft supplement to the GEIS for public comment. Participation in the scoping process by members of the public and local, State, Tribal, and Federal government agencies is

encouraged. The scoping process for the supplement to the GEIS will be used to accomplish the following:

a. Define the proposed action which is to be the subject of the supplement to the GEIS.

b. Determine the scope of the supplement to the GEIS and identify the significant issues to be analyzed in depth.

c. Identify and eliminate from detailed study those issues that are peripheral or that are not significant.

d. Identify any environmental assessments and other EISs that are being or will be prepared that are related to, but are not part of the scope of the supplement to the GEIS being considered.

e. Identify other environmental review and consultation requirements related to the proposed action.

f. Indicate the relationship between the timing of the preparation of the environmental analyses and the Commission's tentative planning and decision-making schedule.

g. Identify any cooperating agencies and, as appropriate, allocate assignments for preparation and schedules for completing the supplement to the GEIS to the NRC and any cooperating agencies.

h. Describe how the supplement to the GEIS will be prepared, and include any contractor assistance to be used.

The NRC invites the following entities to participate in scoping:

a. The applicant, Entergy Nuclear Operations, Inc. (Entergy).

b. Any Federal agency that has jurisdiction by law or special expertise with respect to any environmental impact involved, or that is authorized to develop and enforce relevant environmental standards.

c. Affected State and local government agencies, including those authorized to develop and enforce relevant environmental standards.

d. Any affected Indian tribe.

e. Any person who requests or has requested an opportunity to participate in the scoping process.

f. Any person who has petitioned or intends to petition for leave to intervene.

In accordance with 10 CFR 51.26, the scoping process for an EIS may include a public scoping meeting to help identify significant issues related to a proposed activity and to determine the scope of issues to be addressed in an EIS. The NRC has decided to hold public meetings for the Pilgrim license renewal supplement to the GEIS. The scoping meetings will be held at the Radisson Hotel Plymouth Harbor Ballroom, 180 Water Street, Plymouth,

MA 02360, on May 17, 2006. There will be two sessions to accommodate interested parties. The first session will convene at 1:30 p.m. and will continue until 4:30 p.m., as necessary. The second session will convene at 7 p.m. with a repeat of the overview portions of the meeting and will continue until 10 p.m., as necessary. Both meetings will be transcribed and will include: (1) An overview by the NRC staff of the NEPA environmental review process, the proposed scope of the supplement to the GEIS, and the proposed review schedule; and (2) the opportunity for interested government agencies, organizations, and individuals to submit comments or suggestions on the environmental issues or the proposed scope of the supplement to the GEIS. Additionally, the NRC staff will host informal discussions one hour prior to the start of each meeting at the same location. No formal comments on the proposed scope of the supplement to the GEIS will be accepted during the informal discussions. To be considered, comments must be provided either at the transcribed public meetings or in writing, as discussed below. Persons may register to attend or present oral comments at the meetings on the scope of the NEPA review by contacting the NRC Environmental Project Manager Mr. Robert Schaaf, by telephone at 1-800-368-5642, extension 1312, or by e-mail to the NRC at PilgrimEIS@nrc.gov no later than May 12, 2006. Members of the public may also register to speak at the meeting within 15 minutes of the start of each session. Individual oral comments may be limited by the time available, depending on the number of persons who register. Members of the public who have not registered may also have an opportunity to speak, if time permits. Public comments will be considered in the scoping process for the supplement to the GEIS. Mr. Schaaf will need to be contacted no later than May 3, 2006, if special equipment or accommodations are needed to attend or present information at the public meeting, so that the NRC staff can determine whether the request can be accommodated.

Members of the public may send written comments on the environmental scope of the Pilgrim license renewal review to Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, Mailstop T-6D59, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this Federal Register notice. Comments may also be delivered to the NRC at

Room T-6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, from 7:30 a.m. to 4:15 p.m. during Federal workdays. To be considered in the scoping process, written comments should be postmarked by June 16, 2006. Electronic comments may be sent by e-mail to the NRC at PilgrimEIS@nrc.gov and should be sent no later than June 16, 2006, to be considered in the scoping process. Comments will be available electronically and accessible through NRC's ADAMS link at <http://www.nrc.gov/reading-rm/adams.html> at the NRC Homepage.

Participation in the scoping process for the supplement to the GEIS does not entitle participants to become parties to the proceeding to which the supplement to the GEIS relates. Notice of opportunity for a hearing regarding the renewal application was the subject of the aforementioned Federal Register notice (71 FR 15222). Matters related to participation in any hearing are outside the scope of matters to be discussed at this public meeting.

At the conclusion of the scoping process, the NRC will prepare a concise summary of the determination and conclusions reached, including the significant issues identified, and will send a copy of the summary to each participant in the scoping process. The summary will also be available for inspection in NRC's ADAMS link at <http://www.nrc.gov/reading-rm/adams.html>. The staff will then prepare and issue for comment the draft supplement to the GEIS, which will be the subject of separate notices and separate public meetings. Copies will be available for public inspection at the above-mentioned addresses, and one copy per request will be provided free of charge. After receipt and consideration of the comments, the NRC will prepare a final supplement to the GEIS, which will also be available for public inspection.

Information about the proposed action, the supplement to the GEIS, and the scoping process may be obtained from Mr. Schaaf at the aforementioned telephone number or e-mail address.

Dated at Rockville, Maryland, this 7th day of April 2006.

For the Nuclear Regulatory Commission,
Rani Franovich,
Branch Chief, Environmental Branch B,
Division of License Renewal, Office of Nuclear
Reactor Regulation.

FR Doc. E6-5596 Filed 4-13-06; 8:45 am)

BILLING CODE 7590-01-P

OCCUPATIONAL SAFETY AND HEALTH REVIEW COMMISSION

Privacy Act of 1974; New and Revised Systems of Records, and Deletion of a Duplicative System of Records

AGENCY: Occupational Safety and Health
Review Commission.

ACTION: Notice.

SUMMARY: In accordance with the Privacy Act of 1974, 5 U.S.C. 552a, as amended, the Occupational Safety and Health Review Commission (OSHRC) is proposing in this notice the addition of a new system of records; the bifurcation of an existing system of records; the deletion of a duplicative system of records; and revisions to preexisting systems of records, including the addition of new routine uses.

DATES: Comments must be received by the OSHRC by May 15, 2006. The new and revised systems of records will become effective on June 13, 2006, without any further notice in the Federal Register, unless comments or government approval procedures necessitate otherwise.

ADDRESSES: The Commission will accept and consider all written comments. Submit any written comments by mail or fax to Ron Bailey, Attorney Advisor, Office of General Counsel, OSHRC, 1120 20th Street, NW., Ninth Floor, Washington, DC 20036-3457; Fax Number, (202) 606-5417.

FOR FURTHER INFORMATION CONTACT: Ron Bailey, Attorney Advisor, Office of General Counsel, (202) 606-5410, rbailey@oshrc.gov.

SUPPLEMENTARY INFORMATION: The Privacy Act of 1974, 5 U.S.C. 552a(e)(4), requires federal agencies such as OSHRC to propose additions and revision to its systems of records in a Federal Register publication. As detailed below, OSHRC is proposing the addition of a new system of records; the bifurcation of an existing system of records; the deletion of a duplicative system of records; and revisions to preexisting systems of records, including the addition of new routine uses. OSHRC is also proposing changes, both superficial and substantive, to its blanket routine uses.

I. Blanket Routine Uses

OSHRC's current Blanket Routine Uses (BRUs) are published in 66 FR 42689 (Aug. 14, 2001). OSHRC proposes the following changes to its BRUs.

In the sentence preceding the list of BRUs, OSHRC would add the qualification that records will be

disclosed as a routine use only if "disclosure of the record or information is compatible with the purpose for which the record or information was collected." As the definition of "routine use" includes this compatibility requirement, see 5 U.S.C. 552a(a)(7), it should apply to all BRUs.

For the purpose of streamlining the notice, OSHRC would combine BRUs 1 and 2. Despite the merger, the categories of users and the purposes for using any disclosed records would remain the same. OSHRC would reword the first sentence of BRU 3 to clarify the scope of the routine use, but again, the categories of users and the purposes for using any disclosed records would not change. OSHRC would broaden BRUs 4 and 5 to include records relevant to OSHRC decisions concerning appointment of employees, suspension or revocation of security clearances, and the execution of security or suitability investigations. The current versions of these BRUs include decisions concerning the hiring or retention of employees, and the issuance of security clearances, but fail to reference the related areas of decision-making noted above.

OSHRC would add a sentence to the end of BRU 6, notifying the reader that "[r]ecords will be disclosed only to the extent that the information is relevant and necessary to the case or matter." OSHRC would add a similar qualification to BRU 8. These qualifications reflect the importance of protecting an individual's records from unnecessary disclosures. Moreover, the Privacy Act could be read to require that disclosure, pursuant to a routine use, may occur only when relevant and necessary to accomplish a mandated purpose: Section 552a(e)(1) instructs an agency to "maintain in its records only such information about an individual as is relevant and necessary to accomplish a purpose of the agency required to be accomplished by statute or by executive order of the President"; because the Privacy Act defines "maintain" as including "maintain, collect, use, or disseminate," the requirement stated in (e)(1) seemingly applies to the dissemination of records via routine uses.

OSHRC would edit the language in BRU 10 to more precisely reflect when records may be disclosed. The BRU would also be modified to require written requests from the subjects of the records. Also, OSHRC would modify BRU 12 to reflect that, pursuant to 44 U.S.C. 2904 and 2906, the National Archives and Records Administration (NARA) handles records management inspections.



Environmental Scoping Meeting Pilgrim Nuclear Power Station

U.S. Nuclear Regulatory Commission

May 17, 2006



ALL INFORMATION CONTAINED

HEREIN IS UNCLASSIFIED

DATE 01/14/01 BY 60322

FOR RELEASE UNDER E.O. 13526

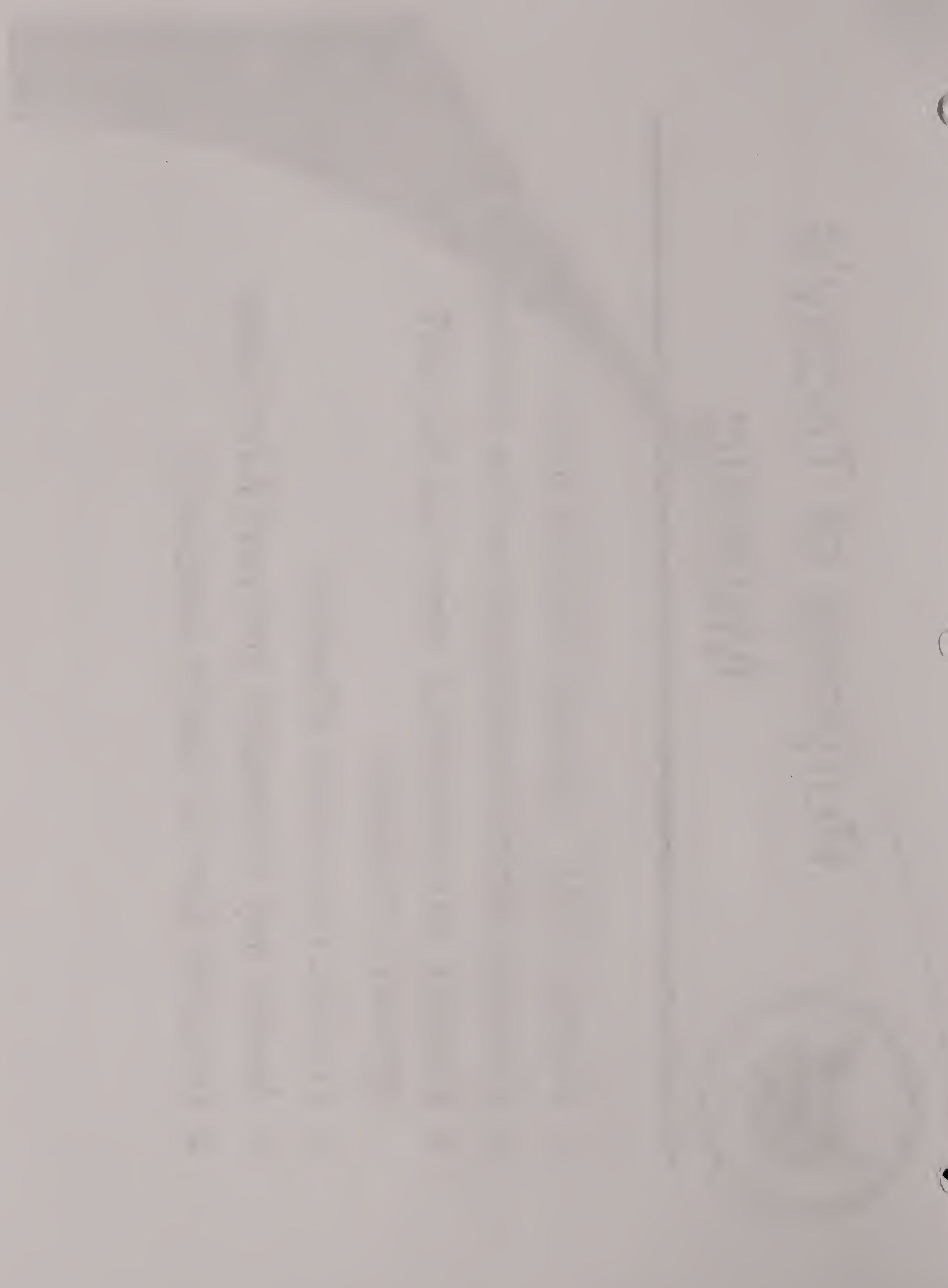
2025 RELEASE UNDER E.O. 14176

2025 RELEASE UNDER E.O. 14176



Purpose of Today's Meeting

- Discuss NRC's license renewal process
- Describe the environmental review process
- Identify environmental areas that the staff typically evaluates
- Provide the review schedule
- Accept any comments you may have today
- Describe how to submit comments





Pilgrim Nuclear Power Station License Renewal

- Current operating license expires on
June 12, 2012.
- Application requests authorization to
operate the plant for an additional 20 years.



NRC Regulatory Oversight

- NRC is An Independent Executive Agency
- NRC's Governing Statutes
 - Atomic Energy Act
 - Energy Reorganization Act
 - National Environmental Policy Act
 - Other Statutes
- NRC's Mission
 - Protect Public Health and Safety
 - Protect Environment
 - Promote Common Defense and Security

1. The first part of the paper discusses the importance of maintaining accurate records of all transactions.

2. It then goes on to describe the various methods used to collect and analyze data.

3. The next section deals with the results of the study and the conclusions drawn from them.

4. Finally, the paper ends with a discussion of the implications of the findings for future research.

(25)

Cheng, J. (2010). The Role of the State in the Development of the Chinese Economy. *Journal of Economic Surveys*, 24(1), 1-28.



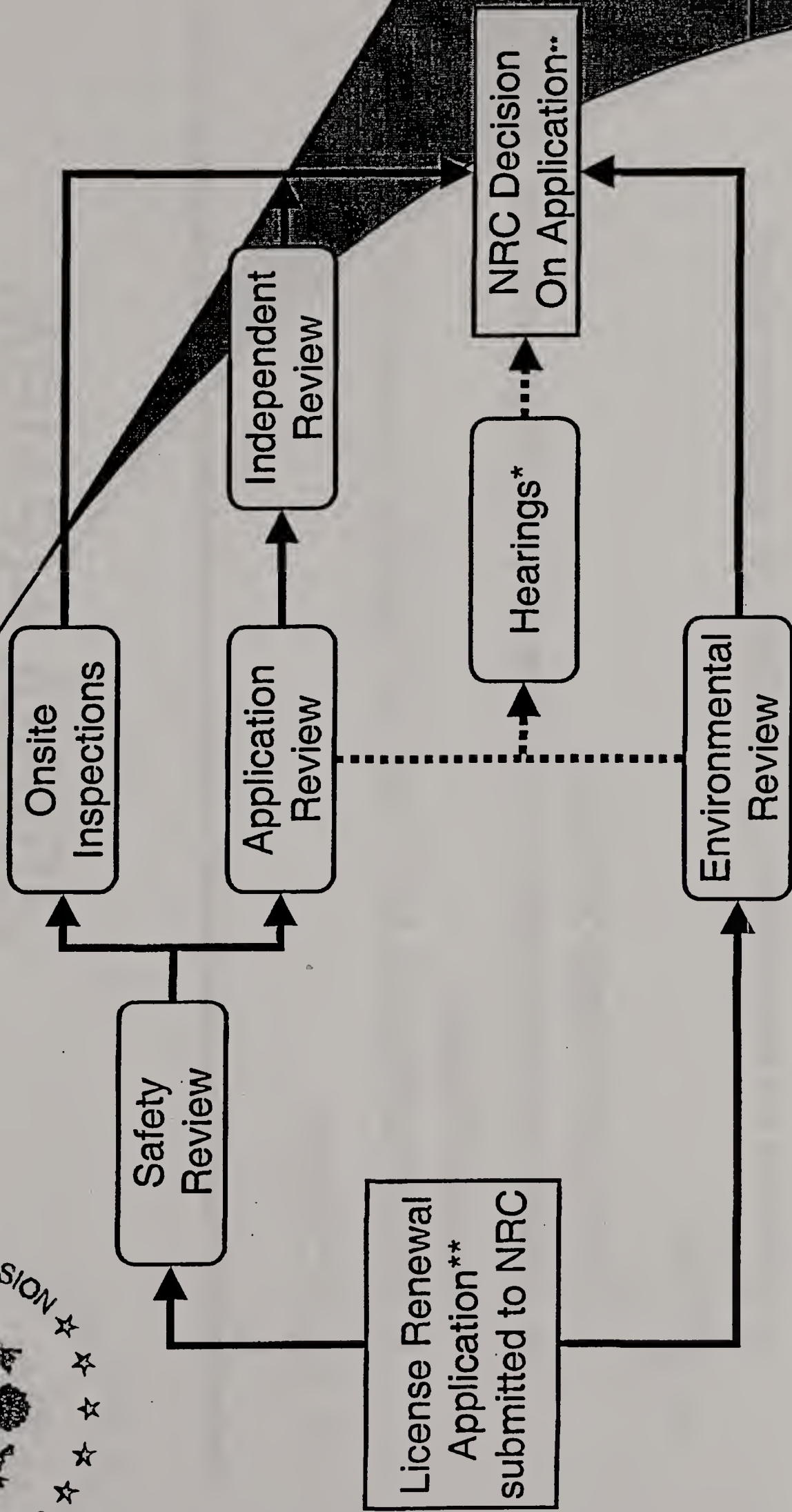
NRC's License Renewal Review

- Safety review
- Environmental review
- Plant inspections
- Advisory Committee on Reactor Safeguards (ACRS)





License Renewal Process



* If a Request for Hearing is Granted

** Available at www.nrc.gov



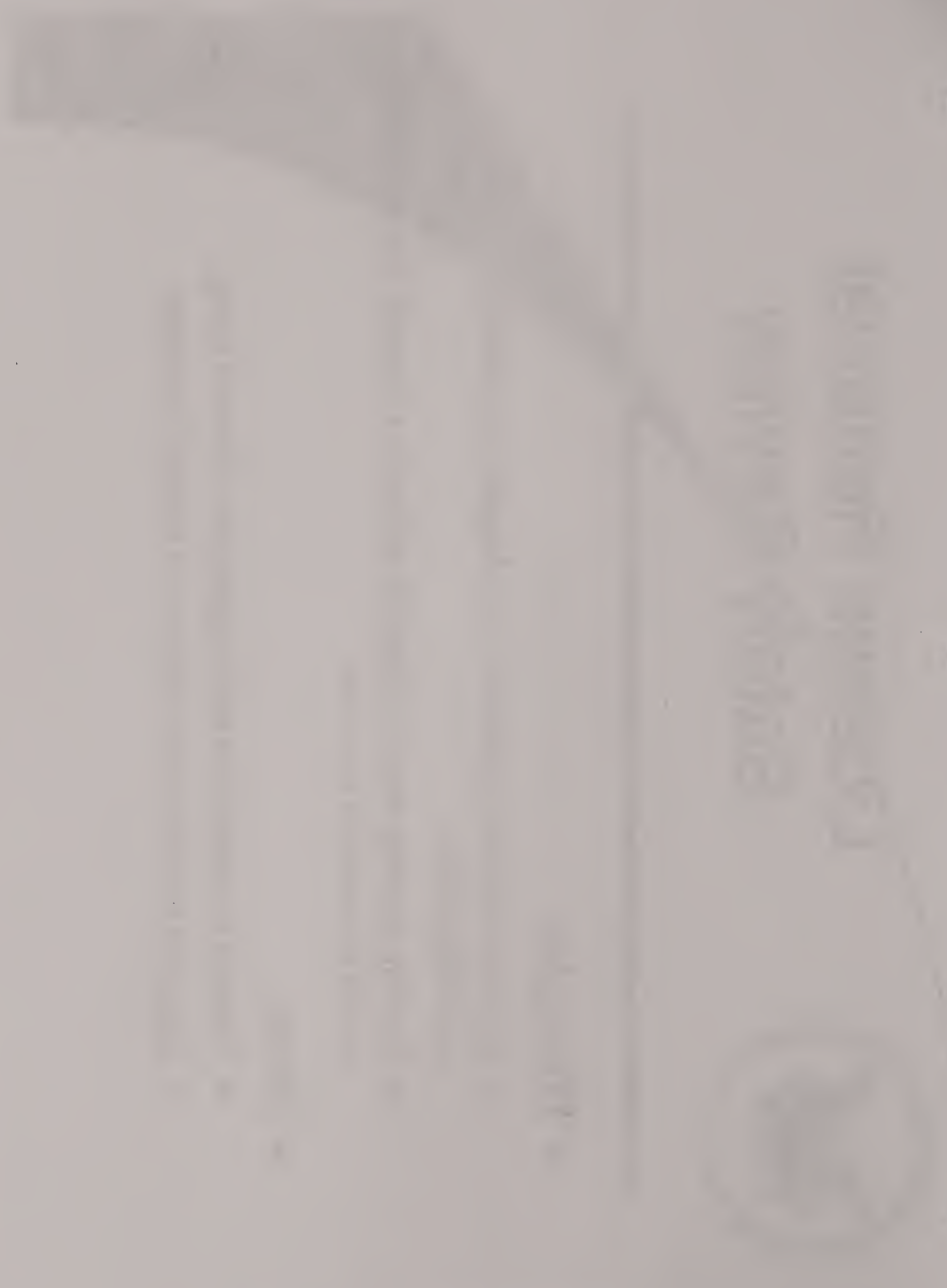
License Renewal Safety Review

➤ Principles

- Existing regulatory processes are adequate for ensuring safety of operating plants
- Current licensing basis is adequate and carries forward into period of extended operation

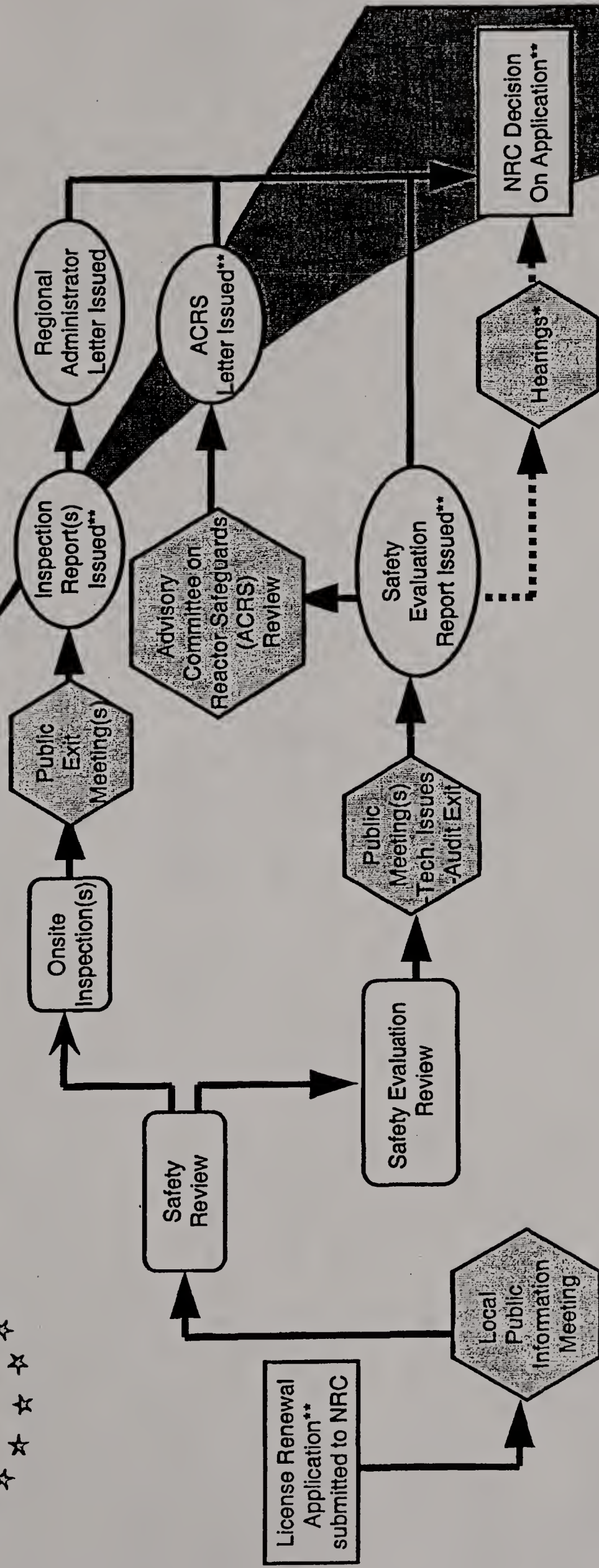
➤ Scope

- Focused on assessment of managing the affects of aging
- Does Not Include Issues Subject to Ongoing Oversight





Safety Review Process



Opportunities for Public Interaction

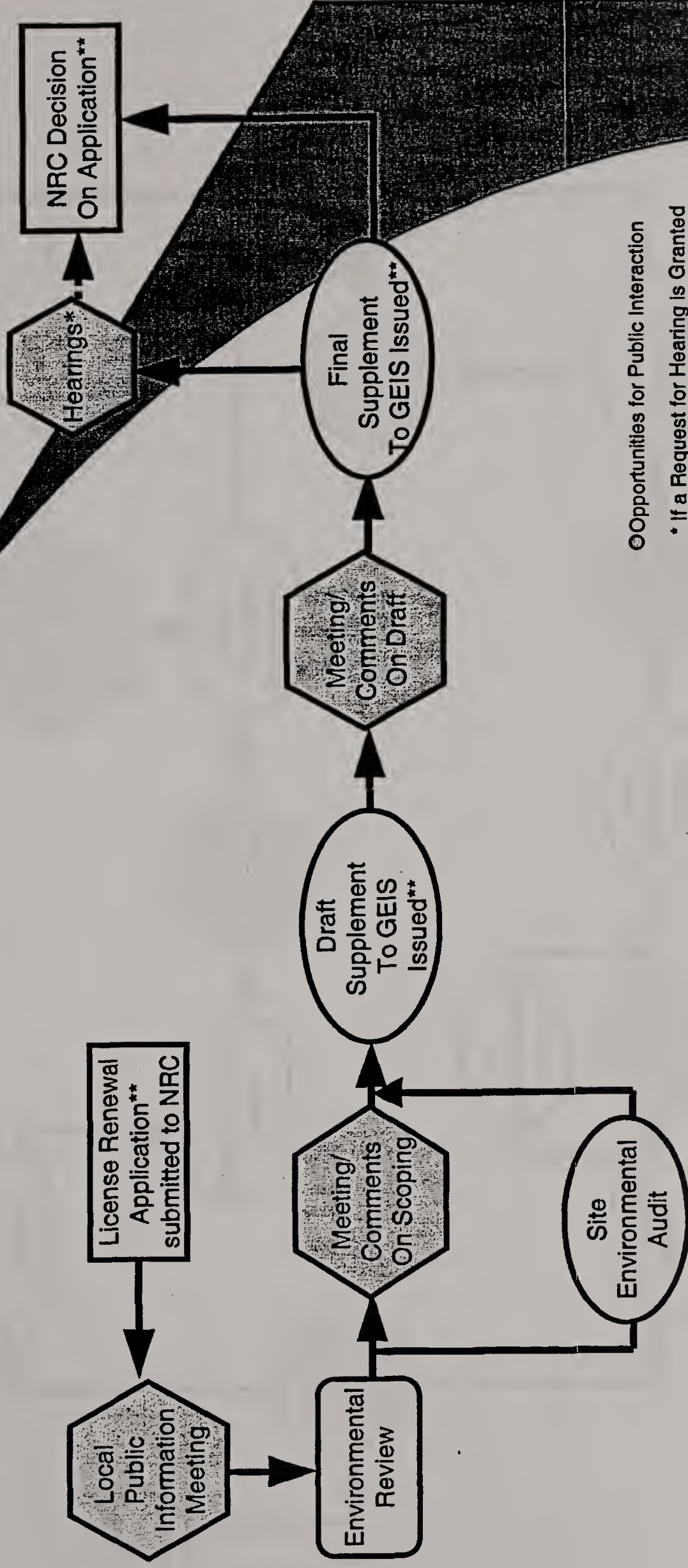
* If a Request for Hearing is Granted

** Available at www.nrc.gov





Environmental Review Process



○ Opportunities for Public Interaction
* If a Request for Hearing is Granted
** Available at www.nrc.gov

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**** Available at www.nrc.gov**





National Environmental Policy Act

- NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- An Environmental Impact Statement (EIS) is required for major Federal actions significantly affecting the quality of the human environment.
- Commission has determined that a supplement to the "Generic EIS for License Renewal of Nuclear Plants" will be prepared for a license renewal application.





Analysis Approach

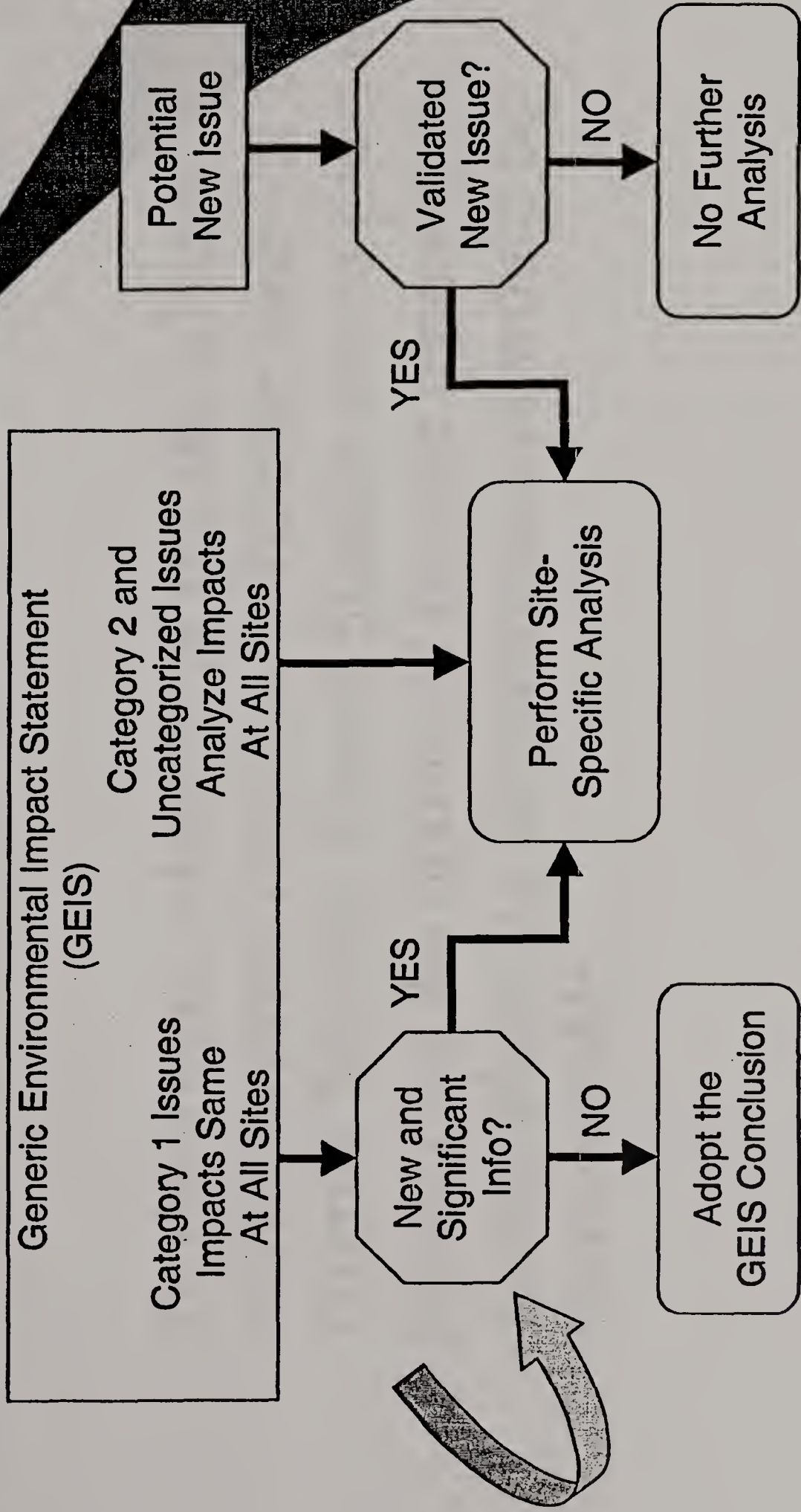




Diagram of the system

Page 1



Decision Standard for Environmental Review

To determine whether or not the adverse environmental impacts of license renewal for Pilgrim Nuclear Power Station are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.



Environmental Review Milestones

➤ Application Received	January 27, 2006
➤ Notice of Intent	April 14, 2006
➤ Site Audit	May 1-4, 2006
➤ Scoping Public Meeting	May 17, 2006
➤ Scoping Comments Due	June 16, 2006
➤ Scoping Summary Report	August 2006
➤ Draft SEIS	December 2006
➤ Draft SEIS Public Meeting	January 2007
➤ Draft SEIS Comments Due	February 2007
➤ Final SEIS	August 2007

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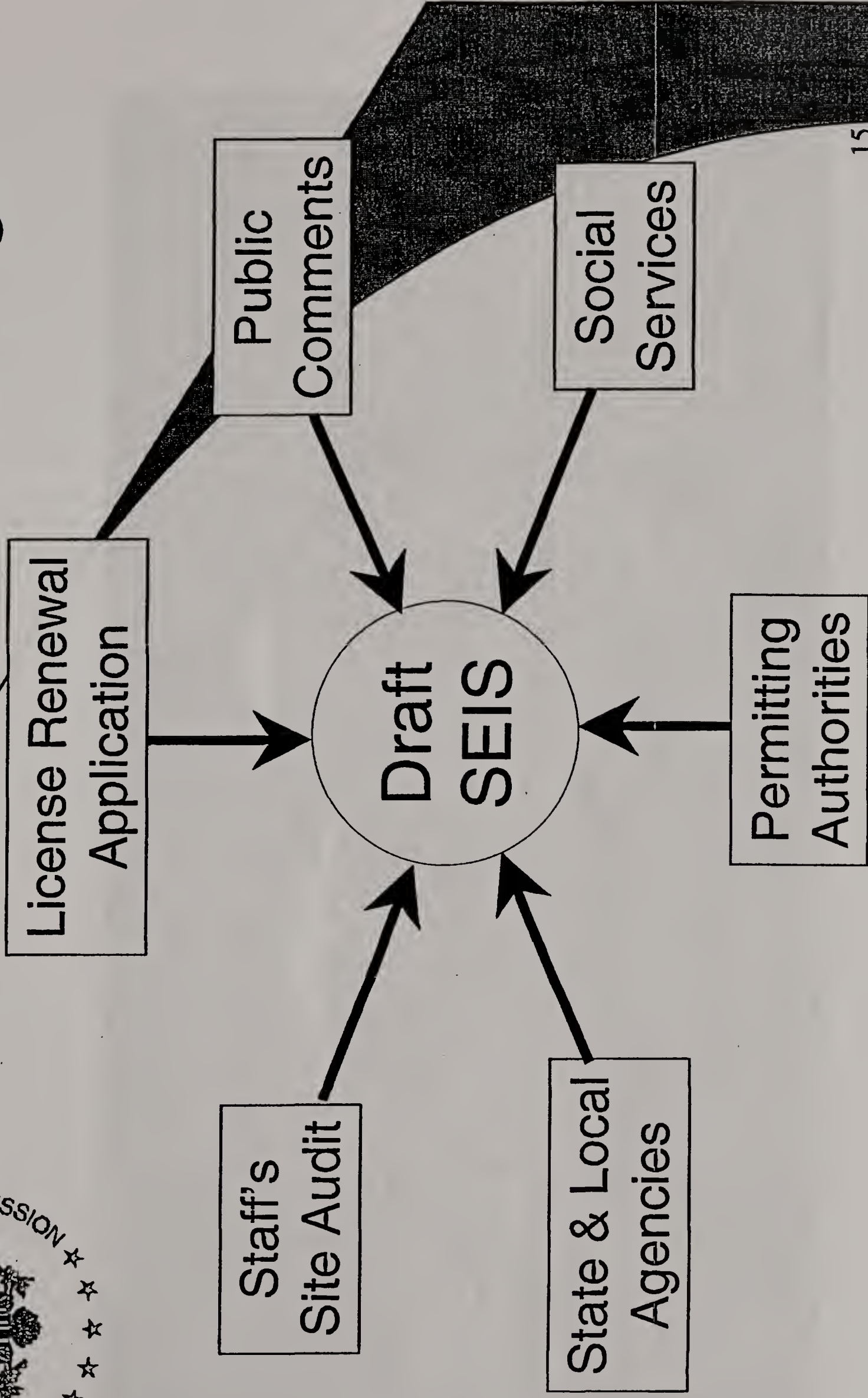
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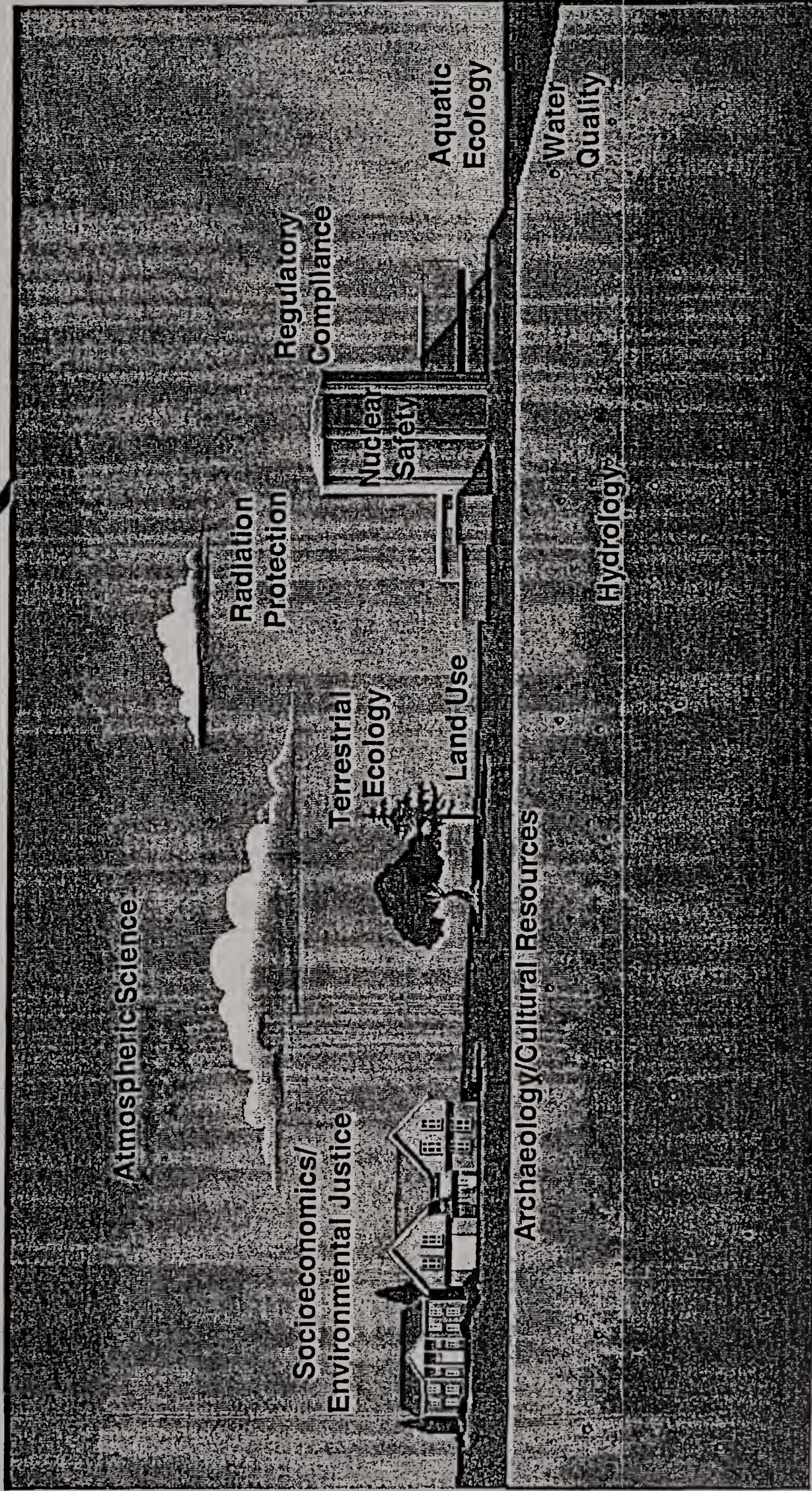
Information Gathering







Team Expertise



Small - 100 - 100 - 100

Small - 100 - 100 - 100



Additional Information

- Agency points of contact:
 - (800) 368-5642
 - Alicia Williamson, ext 1878
 - Robert G. Schaaf, ext. 1312
- Documents located at:
 - Plymouth Public Library, 132 South Street, Plymouth, MA
 - Kingston Public Library, 6 Green Street, Kingston, MA
 - Duxbury Free Library, 77 Alden Street, Duxbury, MA
- Documents can also be viewed at the NRC's Web site (www.nrc.gov)

THE UNIVERSITY OF CHICAGO





Submitting Comments

Provide written comments:

➤ By mail: Chief, Rules and Directives Branch
Division of Administrative Services
Mailstop T-6D59
U.S. Nuclear Regulatory Commission
Washington, DC 20555

➤ E-mail: PilgrimELS@nrc.gov

➤ In person: 11545 Rockville Pike
Rockville, Maryland

Comments should be submitted by June 16, 2006.





Pilgrim Nuclear Power Station

cc:

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Chief Executive Officer
Entergy Operations
1340 Echelon Parkway
Jackson, MS 39213

Mr. John T. Herron
Sr. VP and Chief Operating Officer
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440 Hamilton Avenue
White Plains, NY 10601

Mr. Christopher Schwarz
Vice President, Operations Support
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
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Mr. Michael A. Balduzzi
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
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Mr. Kevin H. Bronson
General Manager, Plant Operations
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Mr. Stephen J. Bethay
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Director, Licensing
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Ms. Charlene D. Faison
Manager, Licensing
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Mr. Michael J. Colomb
Director of Oversight
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Salisbury, MD 21801-2490

Mr. Michael D. Lyster
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Naples, FL 34110-7306

Mr. Garrett D. Edwards
814 Waverly Road
Kennett Square, PA 19348

cc:

Mr. James Ross
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

Regional Administrator, Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
Pilgrim Nuclear Power Station
Post Office Box 867
Plymouth, MA 02360

Chairman, Board of Selectmen
11 Lincoln Street
Plymouth, MA 02360

Chairman
Nuclear Matters Committee
Town Hall
11 Lincoln Street
Plymouth, MA 02360

Chairman, Duxbury Board of Selectmen
Town Hall
878 Tremont Street
Duxbury, MA 02332

Office of the Commissioner
Massachusetts Department of
Environmental Protection
One Winter Street
Boston, MA 02108

Office of the Attorney General
One Ashburton Place
20th Floor
Boston, MA 02108

Director, Radiation Control Program
Commonwealth of Massachusetts
Executive Offices of Health and
Human Services
174 Portland Street
Boston, MA 02114

Secretary of Public Safety
Executive Office of Public Safety
One Ashburton Place
Boston, MA 02108

Director, Massachusetts Emergency
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4. The fourth part of the document addresses the importance of regular audits in the financial reporting process. It explains how audits provide an independent assessment of the reliability of the financial statements and help to identify areas for improvement.

5. The fifth part of the document discusses the impact of technology on financial reporting. It highlights the benefits of using accounting software and other digital tools to streamline the reporting process and improve the accuracy of the data.

7. The seventh part of the document discusses the role of the accounting profession in maintaining the integrity of the financial system. It highlights the importance of adhering to professional standards and ethics, and of providing high-quality service to clients.

8. The eighth part of the document discusses the impact of globalization on financial reporting. It highlights the challenges of dealing with different accounting standards and currencies, and the need for international cooperation to ensure the consistency and reliability of financial data.

10. The tenth part of the document discusses the future of financial reporting. It highlights the potential of new technologies, such as blockchain and artificial intelligence, to revolutionize the way financial data is collected, processed, and reported.

12. The twelfth part of the document discusses the role of the accounting profession in promoting sustainable development. It highlights the importance of considering environmental and social factors in financial reporting, and of providing information that helps stakeholders make informed decisions about the company's long-term viability.

17. The seventeenth part of the document discusses the role of the accounting profession in maintaining the integrity of the financial system. It highlights the importance of adhering to professional standards and ethics, and of providing high-quality service to clients.

18. The eighteenth part of the document discusses the impact of globalization on financial reporting. It highlights the challenges of dealing with different accounting standards and currencies, and the need for international cooperation to ensure the consistency and reliability of financial data.

20. The twentieth part of the document discusses the future of financial reporting. It highlights the potential of new technologies, such as blockchain and artificial intelligence, to revolutionize the way financial data is collected, processed, and reported.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 25, 2006

LICENSEE: Entergy Nuclear Operations, Inc

FACILITY: Pilgrim Nuclear Power Station

SUBJECT: SUMMARY OF CONFERENCES CALLS WITH ENTERGY NUCLEAR OPERATIONS, INC, TO DISCUSS THE SEVERE ACCIDENT MITIGATION ALTERNATIVES REQUESTS FOR ADDITIONAL INFORMATION FOR PILGRIM NUCLEAR POWER STATION (TAC NO. MC9676)

On June 6 & 15, 2006, the U.S. Nuclear Regulatory Commission (NRC) staff and its contractor from Information Systems Laboratory conducted two conference calls (teleconferences) with representatives from Entergy Nuclear Operations, Inc. (Entergy), to discuss the Pilgrim Nuclear Power Station (Pilgrim) severe accident mitigation alternatives (SAMA) requests for additional information (RAIs) (ML061440026). The NRC staff formally sent the SAMA RAIs to Entergy by letter dated May 22, 2006, in support of the environmental review of the Pilgrim application for license renewal. The teleconferences were held to clarify these RAIs. The enclosure contains a listing of teleconference participants.

Entergy asked questions about several of these RAIs, and the NRC staff provided information to help clarify those questions. No staff decisions were made during the telephone conferences.

A handwritten signature in black ink, appearing to read "Alicia Williamson", is positioned above the typed name.

Alicia Williamson, Project Manager
Environmental Branch B
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
List of Teleconference Participants

cc w/encl: See next page

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TO DISCUSS THE SEVERE ACCIDENT MITIGATION ALTERNATIVES
REQUESTS FOR ADDITIONAL INFORMATION
FOR PILGRIM NUCLEAR POWER STATION

JUNE 6 & 15, 2006

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Enclosure

Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 25, 2006

LICENSEE: Entergy Nuclear Operations, Inc

FACILITY: Pilgrim Nuclear Power Station

SUBJECT: SUMMARY OF ENVIRONMENTAL SITE AUDIT RELATED TO THE REVIEW
OF THE LICENSE RENEWAL APPLICATION FOR PILGRIM NUCLEAR
POWER STATION (TAC NO. MC9676)

From May 1, 2006, to May 5, 2006, a review team consisting of the U.S. Nuclear Regulatory Commission (NRC) staff and contractors from Earth Tech participated in a site audit at the Pilgrim Nuclear Power Station (Pilgrim) related to the environmental review of the Pilgrim license renewal application (LRA). The team consisted of nine Earth Tech contractors and nine NRC staff members. The primary goal of the site visit was to review documentation, gather information to ensure that environmental requirements of license renewal as codified in Title 10 of the Code of Federal Regulations Part 51 (10 CFR Part 51) are met, and to interface with officials in Federal, State and local government agencies to obtain related information.

Enclosure 1 is a list of NRC, EarthTech, and Entergy Nuclear Operations, Inc. (Entergy) representatives who participated in the site audit. Enclosure 2 is a table of documents provided by Entergy to assist the NRC staff in its review of the Pilgrim Environmental Report. These documents are publicly available, and can be found at the Agencywide Documents Access and Management System (ADAMS); the accession numbers are listed in Enclosure 2. ADAMS is accessible at <http://www.nrc.gov/reading-rm/adams.html> or through the NRC's Electronic Reading Room link at <http://www.nrc.gov>. Persons who do not have access to ADAMS, or who encounter problems in accessing the documents located in ADAMS, should contact the NRC's Public Document Room staff at 1-800-397-4209, 301-415-4737, or by e-mail at pdr@nrc.gov.

The site audit began with an introductory meeting and site tour on Monday, May 1, 2006. During the introductory meeting, Entergy provided a brief presentation on the history of Pilgrim and some of the current environmental monitoring programs. This was followed by a brief NRC presentation on the license renewal environmental review process. The site tour focused on areas relevant to the environmental review, including the intake and discharge canal, fish return system, and outside storage areas. During the rest of the site audit, review team members broke off into smaller groups with Entergy representatives to discuss specific aspects of the environmental review. These groups participated in various activities, including tours of the radioactive waste treatment stations, transmission line corridors and a winter flounder hatchery. An onsite cultural resources survey also was conducted.

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In addition, during the site audit, review team members met offsite with staff representing the Environmental Protection Agency, Massachusetts Coastal Zone Management Agency, Massachusetts Division of Marine Fisheries, Massachusetts Department of Public Health's Radiation Control Program, and local governmental organizations (town planners and selectmen). Information gathered through these offsite meetings will assist the environmental review team in its evaluation.

At the conclusion of the site visit, the NRC staff and Earth Tech contractors participated in a summary exit meeting with Entergy. The NRC staff indicated that the review team did not identify any significant issues during its site visit or the visits offsite with State and local agencies. Entergy provided all requested documentation and information to the NRC environmental review team. However, the NRC staff indicated that the review was ongoing and that any additional information necessary to support the review would be formally requested as a request for additional information.

A handwritten signature in black ink, appearing to read 'Alicia Williamson', with a long horizontal flourish extending to the right.

Alicia Williamson, Project Manager
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Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:
As stated

cc w/encls.: See next page

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[illegible]

**References Collected at the
Pilgrim Nuclear Power Station
Site Audit
May 1-5, 2006**

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4.	NSTAR, "ENVIRO printouts," facsimile from B. Connors, NSTAR, to D. Thrall, Entergy, April 9, 2001	ML061390250
5.	TetraTech NUS, "Calculation of Induced Current for the License Renewal Environmental Report - Pilgrim Nuclear Power Station," Aiken, SC, April 23, 2001	ML061390251
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10.	Maccaferri, E., Jr., Town of Plymouth Treasurer, "Total revenues and operating budget information," Facsimile transmission to E. N. Hill, TtNUS, Plymouth, MA, May 22, 2001	ML061390260
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18.	Massachusetts Department of Environmental Protection, Bureau of Resource Protection - Drinking Water Program, 2003 Public Water Supply Annual Statistical Report, Boston, MA, 2004	ML061390280
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21.	Potable Water Usage at PNPS	ML061430167
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25.	Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report January 1 through December 31, 2005 (Entergy, 2005)	ML061440631
26.	Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report January 1 through December 31, 2004 (Entergy, 2004)	ML061420367
27.	Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report January 1 through December 31, 2003 (Entergy, 2003)	ML061420372



	Reference Document	ADAMS Accession Number
28.	Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report January 1 through December 31, 2002 (Entergy, 2002)	ML061420375
29.	Pilgrim Nuclear Power Station Radiological Effluent and Waste Disposal Report January 1 through December 31, 2001 (Entergy, 2001)	ML061420376
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41.	U.S. Environmental Protection Agency, Water Management Division Region 1, "Modification of Authorization to Discharge Under the National Pollutant Discharge Elimination System, Federal Permit No. MA0003557, Modification No. 1," Boston, MA, August 30, 1994	ML061420166
42.	Massachusetts Department of Environmental Protection, Executive Office of Environmental Affairs, Southeast Regional Office, Groundwater Discharge Permit, SE #2-389, Pilgrim Power Station Wastewater Treatment Facility, Lakeville, MA, April 26, 1999	ML061420180
43.	Pilgrim Nuclear Power Station, Pilgrim Nuclear Power Station Offsite Dose Calculation Manual, Plymouth, MA, October 6, 2003	ML061390420



Date		Description		Amount	
1-1-78		Jan 1	Balance	100.00	
1-15-78		Jan 15	Deposited	50.00	
2-1-78		Feb 1	Withdrawal	25.00	
2-15-78		Feb 15	Deposited	75.00	
3-1-78		Mar 1	Withdrawal	100.00	
3-15-78		Mar 15	Deposited	125.00	
4-1-78		Apr 1	Withdrawal	50.00	
4-15-78		Apr 15	Deposited	150.00	
5-1-78		May 1	Withdrawal	75.00	
5-15-78		May 15	Deposited	200.00	
6-1-78		Jun 1	Withdrawal	100.00	
6-15-78		Jun 15	Deposited	250.00	
7-1-78		Jul 1	Withdrawal	150.00	
7-15-78		Jul 15	Deposited	300.00	
8-1-78		Aug 1	Withdrawal	200.00	
8-15-78		Aug 15	Deposited	350.00	
9-1-78		Sep 1	Withdrawal	250.00	
9-15-78		Sep 15	Deposited	400.00	
10-1-78		Oct 1	Withdrawal	300.00	
10-15-78		Oct 15	Deposited	450.00	
11-1-78		Nov 1	Withdrawal	350.00	
11-15-78		Nov 15	Deposited	500.00	
12-1-78		Dec 1	Withdrawal	400.00	
12-15-78		Dec 15	Deposited	550.00	
1-1-79		Jan 1	Balance	600.00	

	Reference Document	ADAMS Accession Number
44.	U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System – Final Regulations to Establish Requirement for Cooling Water Intake Structures at Phase II Existing Facilities," 69 FR 41576, July 9, 2004	ML061420188
45.	Site Contamination Assessment Report, including sample location map and lab data attachments (March 1999)	ML061460009
46.	Copies of 2005/2006 Discharge Monitoring Reports with letters and attachments (GroundWater)	ML061420183
47.	Copies of any NOV's in last 5 years or confirmation that no NOV's have been issued	ML061420352
48.	Boring/Monitoring Well installation logs	ML061430165
49.	PNPS Marine Monitoring Program Report Series No.7, Final Report on Bottom Trawl Survey and Impact Assessment of the Thermal Discharge from Pilgrim on Groundfish, 1970-1982, by Boston Edison	ML061420117
50.	Copy of SPCCP, September 2004	ML061430182
51.	Tank Integrity Testing Reports/Schedule for tank testing	ML061430180
52.	Culture Resources Site Map	ML061560215
53.	Response Action Outcome Report for last major spill	ML061450108
54.	EG&G. 1995. PNPS Cooling Water Discharge Bottom Temperature Study. August, 1994. Final report to Boston Edison Company	ML061450065
55.	Performance monitoring and capacity information regarding on-site sewage treatment system and leach field	ML061430447
56.	Appendix B of Section 3.2 (Entrainment Monitoring) in Marine Ecology Studies PNPS Report # 65. April 30, 2005	ML061430444
57.	Galya et al. 1997. MWRA Outfall Monitoring Overview Report: 1996. MWRA Environmental Quality Department Technical Report Series 97-8.	ML061430442
58.	UST Testing Letter from Bryan Cournoyer of NEXTEST, dated August 25, 2002	ML061390285
59.	Capacity Factor Table 1993-2005, inclusive	ML061390374
60.	Pilgrim Unit 2 PSAR, Section 2.5.1 (A), Core Borings/Soil Samples	ML061390381
61.	Photographs of Greenwood Estate circa 1966-1967	ML061390386
62.	NSTAR Gas and Electric 2006 Vegetation Management Plan	ML061420192



	Reference Document	ADAMS Accession Number
63.	Pilgrim Nuclear Power Station Marine Environmental Monitoring Program Report Series No. 1, Final Report on Dissolved Gas Saturation in the Inshore Marine Waters of Cape Cod Bay and Incidents of Gas Bubble Disease at Pilgrim Nuclear Power Station 1973-1985	ML061420201
64.	Pilgrim Nuclear Power Station Marine Environmental Monitoring Program Report Series No. 5, Final Report on Irish Moss (<i>chondrus crispus</i>) Harvesting Along the Plymouth Shoreline and Impact Assessment of Pilgrim Station on the fishery, 1971-1982, by Boston Edison Company	ML061420210
65.	Entergy Nuclear Generation Company, Environmental Protection Department, Pilgrim Nuclear Power Station, Marine Ecology Studies Related to Operation of Pilgrim Station, Semi-Annual Report # 56 (January - June 2000), Plymouth, MA, October 31, 2000.	ML061430173
66.	Entergy Nuclear Generation Company, Forest Management Plan, prepared for Entergy by Benjamin Forestry Services, South Easton, Massachusetts, and submitted to Massachusetts Department of Environmental Management, Division of Forests & Parks, Boston, MA, September 12, 2002	ML061420120
67.	Plymouth Bay Aquatic Maps depicting larvae sampling stations and water depth and tidal levels	ML061420173
68.	CWS Configuration During a Thermal Backwash	ML061420170
69.	Marine Ecology Studies Related to Operation of Pilgrim Station Semi-Annual Report No. 66; Report Period: January 2005 through June 2005; Issued October 30, 2005	ML061420123
70.	Sluiceway Modification 1979	ML061430176
71.	Entergy Nuclear Review of New and Significant Information PNPS	ML061430171
72.	Marine Ecology Studies Pilgrim Nuclear Power Station; Report No. 65 Report Period: January 2004 - December 2004, Issued April 30 2005	ML061430444
73.	Stone and Webster Engineering Corporation. 1977. Supplemental Assessment in Support of the 316 Demonstration. Pilgrim Nuclear Power Station - Units 1 and 2. Prepared for Boston Edison Company, Boston, MA	ML061440565
74.	Study of Winter Flounder Larval Transport in Coastal Cape Cod Bay and Entrainment at Pilgrim Nuclear Power Station, ENSR and Marine Research, Inc, December 2002	ML061420179
75.	Study of Winter Flounder Larval Transport in Coastal Cape Cod Bay and Entrainment at Pilgrim Nuclear Power Station, ENSR and Marine Research, Inc, February 2005	ML061420176
76.	Electronic Map of Transmission Lines	ML061390284



	Reference Document	ADAMS Accession Number
77.	Town of Kingston Conservation Commission Memo, From: Maureen Thomas, To: Kevin Donovan, Dated: February 14, 2006 in regards to Pilgrim Nuclear Power Station Re-Licensing	ML061390426
78.	Study of Winter Flounder Larval Transport in Coastal Cape Cod Bay and Entrainment at Pilgrim Nuclear Power Station, ENSR and Marine Research, Inc, November 2000	ML061420121
79.	2002 Massachusetts Lobster Fishery Statistics, Massachusetts Division of Marine Fisheries Technical Report TR-20, March 2004	ML061390429
80.	Benthic algal monitoring at PNPS, March, 2000	ML061420541
81.	Lawton, et al. 1999, Annual Report on Assessment and Mitigation of Impact of the PNPS on finfish populations in western Cape Cod Bay In: Marine Ecology Studies related to operation of Pilgrim Station. Semiannual report # 53	ML061440568
82.	Stone and Webster Engineering Corporation. 1975 . 316 Demonstration. Pilgrim Nuclear Power Station - Units 1 and 2. Prepared for Boston Edison Company, Boston, MA	ML061440613
83.	Hartwell, A.D. and Mogolesko, F.J., Three-Dimensional Field Surveys of Thermal Plumes from Backwashing Operations at a Coastal Power Plant Site in Massachusetts	ML061420520
84.	Marine Ecology Studies Related to Operation of PNPS Final Report July 1969-December 1977, Volume 2 of 3	ML061450057
85.	Baker, Edward, Stock Enhancement: An Overview (Draft)	ML061560209
86.	The BSC Group, Inc, Supporting Information for Department of the Army Permit; Maintenance Dredging of Pilgrim Nuclear Power Station Intake Canal, September 13, 1996	ML061420515
87.	Environmental Protection Group, Pilgrim Nuclear Power Station Marine Ecology Studies Report No. 67, Report Period: January 2005-December 2005, April 30, 2006	ML061440627
88.	Final Report on Spawning Sea-Run Rainbow Smelt (<i>Osmerus mordax</i>) in the Jones River and Impact Assessment of Pilgrim Station on the Population, 1979-1981, June 1990	ML061420540
89.	Final Report Winter Flounder (<i>Pseudopleuronectes americanus</i>) Studies (1993-1999) in Relation to Impact Assessment of Pilgrim Station on the Local Population, March 2000	ML061560277
90.	Final Report on Rainbow Smelt (<i>Osmerus mordax</i>) Restoration Efforts in the Jones River, 1994-1999, December 1999	ML061560231
91.	Final Report Studies (1990-1997) and Impact Assessment of Pilgrim Station on Cunner in Western Cape Cod Bay, January 2000	ML061560251

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	Reference Document	ADAMS Accession Number
92.	Final Report on Haul-Seine Survey and Impact Assessment of Pilgrim Station on Shore-Zone Fishes, 1981-1991, December 30, 1992	ML061560233
93.	Thermal Surveys of Backwashing Operations at Pilgrim Station During July 1997, August 1977	ML061560291
94.	PNPS Intake Canal Discharge and Screenwash Sampling and TRC analysis	ML061390424
95.	Simulation of Larvae Dispersion and Entrainment Near A Coastal Power Station	ML061560228
96.	PNPS Chlorination System	ML061390351
97.	Copies of 2005/2006 Discharge Monitoring Reports with letters and attachments (surfacewater)	ML061440575
98.	Impingement Survival, 1980-1983 Studies, Final Report	ML061420519
99.	Local County Employment and Housing Data	ML061390329
100.	PNPS Impact on Commercial and/or Recreational Fishery	ML061390335
101.	Local Transient population information/Data	ML061390343
102.	Photos Taken on 5/4/06 of View from Junction of Pricilla and White Horse Beaches	ML062010490
103.	Marine Ecology Studies, Report #67, Appendix B, Jan-Dec. 2005, Geometric Mean Monthly Ichthyoplankton Densities	ML062010482
104.	Entergy Response to 6/9/00 308 Letter and Other 316(b) Questions Raised at Meeting on 9/27/00	ML061940214

Date		Description		Amount	
1900	Jan 1	Balance		100.00	
1900	Jan 15	Received from A		50.00	
1900	Feb 1	Received from B		25.00	
1900	Mar 1	Received from C		75.00	
1900	Apr 1	Received from D		100.00	
1900	May 1	Received from E		150.00	
1900	Jun 1	Received from F		200.00	
1900	Jul 1	Received from G		250.00	
1900	Aug 1	Received from H		300.00	
1900	Sep 1	Received from I		350.00	
1900	Oct 1	Received from J		400.00	
1900	Nov 1	Received from K		450.00	
1900	Dec 1	Received from L		500.00	
1900	Dec 31	Total		2500.00	

Pilgrim Nuclear Power Station

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Pilgrim Nuclear Power Station

-5-

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 25, 2006

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601-1839

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application (LRA) and has identified, in the enclosure, areas where additional information is needed to complete the review. These relate to Section 2.1 of the LRA on Scoping and Screening Methodology.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Request for Additional Information

cc: See next page

REQUEST FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SECTION 2.5
SECTION 2.1 - SCOPING AND SCREENING METHODOLOGY

1. RAI 2.1-1: Review Methodology for Non-Accident Design Basis Events

10 CFR 54.4(a)(1) states, in part, that systems, structures, and components (SSCs) within the scope of license renewal include safety-related SSCs which are those relied upon to remain functional during and following design basis events (as defined in 10 CFR 50.49(b)(1)). 10 CFR 50.49, states that design basis events are defined as conditions of normal operation, including anticipated operational occurrences, design basis accidents, external events, and natural phenomena for which the plant must be designed. In regard to identification of design basis events, Section 2.1.3, "Review Procedures," of NUREG-1800 states:

The set of design basis events as defined in the rule is not limited to Chapter 15 (or equivalent) of the [updated final safety analysis report] (UFSAR). Examples of design basis events that may not be described in this chapter include external events, such as floods, storms, earthquakes, tornadoes, or hurricanes, and internal events, such as a high-energy-line break. Information regarding design basis events as defined in 10 CFR 50.49(b)(1) may be found in any chapter of the facility UFSAR, the Commission's regulations, NRC orders, exemptions, or license conditions within the [current licensing basis] (CLB). These sources should also be reviewed to identify systems, structures and components that are relied upon to remain functional during and following design basis events (as defined in 10 CFR 50.49(b)(1)) to ensure the functions described in 10 CFR 54.4(a)(1).

During the scoping and screening methodology audit, the NRC staff questioned how non-accident design basis events, particularly design basis events that may not be described in the UFSAR, were considered during scoping. The NRC audit team noted that limiting the review of design bases events to those described in the UFSAR accident analysis could result in omission of safety-related functions described in the CLB.

The staff, therefore, requests the applicant to provide:

- a. A list of the design basis events evaluated as part of the license renewal scoping process.
- b. A description of the methodology used to ensure that all design basis events (including conditions of normal operation, anticipated operational transients, design basis accidents, external events, and natural phenomena) were addressed during license renewal scoping evaluation.
- c. A list of the documentation sources reviewed to ensure that all design basis events were identified.

ENCLOSURE

If, in addressing the above issues, the applicant's review indicates that additional scoping evaluations are required, describe these additional scoping evaluations to address the 10 CFR 54.4(a)(1) criteria. As applicable, list any additional SSCs included within the scope as a result of these efforts, and list those structures and components for which aging management reviews (AMRs) were conducted. For each structure or component describe the aging management programs (AMPs), as applicable, to be credited for managing the identified aging effects.

2. RAI 2.1-2: 10 CFR 54.4(a)(2) Scoping Criteria for Nonsafety-related SSCs

NRC Regulatory Guide 1.188 (Reg. Guide 1.188), "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," Revision 1, dated September 2005, (Reg. Guide 1.188) provided NRC endorsement on the use of NEI 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 6, dated June 2005, (NEI 95-10). Reg. Guide 1.188 indicated that NEI 95-10, Revision 6, provides methods that the NRC staff considers acceptable for complying with the requirements of 10 CFR Part 54 for preparing a license renewal application (LRA).

NEI 95-10, Appendix F, "Industry Guidance on Revised 54.4(a)(2) Scoping Criterion (Non-Safety Affecting Safety)," (NEI 95-10, Appendix F) discusses non-safety SSCs directly connected to safety-related SSCs. NEI 95-10, Appendix F states, in part, that an equivalent anchor may be defined in the CLB, or may consist of a large piece of plant equipment or series of supports that have been evaluated as a part of a plant-specific piping design analysis. Additionally, the guidance states that an applicant may use a combination of restraints or supports, such that the non-safety piping and associated structures and components attached to safety-related piping, is included in the scope up to a boundary point that encompasses at least two supports in each of three orthogonal directions. The guidance in NEI 95-10, Appendix F also describes as an alternative to identifying a seismic anchor or series of equivalent anchors, the use of bounding criteria which includes using a base-mounted component, a flexible connection, or the free end of the piping run as the end point for the portion of the non-safety piping attached to the safety-related piping to be included in the scope of license renewal.

Section 2.1.1.2.2, "Physical Failure of Nonsafety-related SSCs," of the LRA states the following:

For Pilgrim Nuclear Power Station (PNPS), the "structural boundary" is defined as the portion of a piping system outside the safety class pressure boundary, yet relied upon to provide structural support for the pressure boundary.

Section 2.1.2.1.2, "Identifying Components Subject to Aging Management Review Based on Support of an Intended Function for 10 CFR 54.4.2," of the LRA states the following:

5. The fifth part of the document provides a summary of the key points discussed in the previous sections. It reiterates the importance of accurate record-keeping, proper recording procedures, regular reconciling, and strong internal controls.

6. The final part of the document includes a conclusion and a list of references. The conclusion summarizes the overall message of the document, and the references provide sources for further information on the topics discussed.

Nonsafety-related piping systems connected to safety-related systems were included up to the structural boundary or to a point that includes an adequate portion of the nonsafety-related piping run to conservatively include the first seismic or equivalent anchor. An equivalent anchor is a combination of hardware or structures that together are equivalent to a seismic anchor. A seismic anchor is defined as hardware or structures that, as required by analysis, physically restrain forces and moments in three orthogonal directions. The physical arrangement as analyzed insures that the stresses that are developed in the safety related piping and supports are within the applicable piping and structural code acceptance limits. This approach included piping beyond the safety/non-safety interface up to a base mounted component, flexible connection, or the end of a piping run (such as a drain line). This is consistent with the guidance in NEI 95-10, Appendix F.

Based on a review of the LRA, the applicant's scoping and screening implementation procedures, and discussions with the applicant, the NRC staff determined that additional information is required with respect to certain aspects of the applicant's evaluation of the 10 CFR 54.4(a)(2) criteria. The staff requests the applicant to provide the following information:

- a. Indicate how the structural boundary, which includes the portion of the non-safety piping system outside the safety-related pressure boundary and relied upon to provide structural support for the pressure boundary, was developed. Include a description of the analysis performed to identify the portion of non-safety piping and components required to support the integrity of the safety-related piping and components.
- b. Indicate whether equivalent anchors, outside of the analyzed structural boundary and not including the bounding condition terminations (base-component, flexible connection, and end of the piping run), were used. If equivalent anchors, outside of the analyzed structural boundary and not including the bounding condition terminations, were not used, items (c) and (d) below do not need to be addressed.
- c. If equivalent anchors, as described in item (b) above, were used, indicate the definition of equivalent anchor which was used for the purpose of the 10 CFR 54.4(a)(2) evaluation and how the definition corresponds to the CLB and to the definition of equivalent anchor listed in NEI 95-10, Appendix F.
- d. If equivalent anchors, as described in item (b) above, were used, indicate the number and location of equivalent anchors (i.e., extent of condition).

In addressing each of the above issues, if the review indicates that use of the scoping methodology precluded the identification of any non-safety SSCs that could interact with safety-related SSCs, describe any additional scoping evaluations to be performed to address the 10 CFR 54.4(a)(2) criteria.

2. The second part of the document focuses on the implementation of the proposed changes. It details the steps involved in the rollout process, from initial planning to final execution. This section also addresses potential challenges and provides strategies to overcome them, ensuring a smooth transition to the new system.

3. The third part of the document discusses the ongoing monitoring and evaluation of the project. It highlights the need for continuous communication and collaboration between all stakeholders involved. This section also provides a framework for assessing the progress and impact of the project, allowing for timely adjustments and improvements.

4. The final part of the document concludes with a summary of the key findings and recommendations. It reiterates the importance of maintaining high standards of accuracy and transparency throughout the entire process. The document also provides a clear path forward for future projects, ensuring that the lessons learned are applied to future initiatives.

As part of your response, list any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which AMRs were conducted. For each structure and component, describe the AMPs, as applicable, to be credited for managing the identified aging effects.

3. RAI 3.0-X: Quality Assurance Program Attributes in Appendix A, "Updated Safety Analysis Report Supplement," and Appendix B, "Aging Management Programs and Activities"

The NRC staff reviewed the applicant's AMPs described in Appendix A, "Updated Safety Analysis Report Supplement," and Appendix B, "Aging Management Programs and Activities," of the LRA, and LRPD-02, "Aging Management Program Evaluation Report," Revision 1. The purpose of this review was to ensure that the quality assurance attributes (corrective action, confirmation process, and administrative controls) were consistent with the staff's guidance described in NUREG-1800, Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)."

Based on the NRC staff's evaluation, the descriptions of the AMPs and their associated quality attributes provided in Appendix A, Section A.2.1, and Appendix B, Section B.0.3, of the LRA are consistent with the staff's position regarding quality assurance for aging management. However, the description of the corrective action attribute in Section 2.0 of LRPD-02 did not credit the 10 CFR Part 50, Appendix B, quality assurance program.

Therefore, the NRC staff requests that the applicant clarify that the same corrective action program will be applied to all AMPs and that this program meets the requirements of 10 CFR Part 50, Appendix B.

Pilgrim Nuclear Power Station

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WASHINGTON, D.C. 20555-0001

July 26, 2006

Mr. Michael Kansler
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These relate to Sections 2.3.3.9 Fire Protection System—Water and 2.3.3.10 Fire Protection System—Halon.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

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REQUESTS FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
SECTION 2.3.3.9 & 10 - FIRE PROTECTION SYSTEM

The staff reviewed the Pilgrim Nuclear Power Station (PNPS) license renewal application (LRA), updated final safety analysis report (UFSAR), and U.S. Nuclear Regulatory Commission safety evaluation (SE), dated December 21, 1978, approving the PNPS fire protection program (the SE) and supplements. The staff has identified that fire protection (FP) systems and components have been excluded from the scope of license renewal and an aging management review (AMR). These systems and components were not included in the license renewal boundaries and appear to have FP intended functions required for compliance with Title 10 of the Code of Federal Regulations Part 50.48 (10 CFR 50.48) as stated in 10 CFR 54.4. In addition, the staff requests clarification on related technical issues (which may not be addressed in the LRA, thereby raising questions by their omission) which are needed to complete the review. Therefore, the staff requires responses to the following request for additional information (RAI)'s:

Section 2.3.3.9 Fire Protection System—Water

RAI 2.3.3.9-1

LRA drawings LRA-M-218-SH-01-0, LRA-M-218-SH-06-0, and LRA-M-218-SH-08-0 show the sprinkler and water spray systems for the turbine lube oil storage and conditioning as out of scope (i.e., not colored in orange). Please verify whether the turbine lube oil storage sprinkler system, conditioning room ceiling sprinkler system, and conditioning pre-action water spray system, are in scope of license renewal in accordance with 10 CFR 54.4(a) and subject to an AMR in accordance with 10 CFR 54.21(a)(1). If they are excluded from the scope of license renewal and not subject to an AMR, provide justification for the exclusion.

RAI 2.3.3.9-2

LRA drawing LRA-M-218-SH-02-0 shows the piping downstream of the city water supply as out of scope. With the city water supply serving as an alternate supply for the fire water system, please confirm and explain whether this line should be in scope for license renewal and subject to an AMR. If not, please explain the basis.

RAI 2.3.3.9-3

LRA Table 2.3.3-9 excludes several components shown in color (i.e., in scope) in the LRA drawing LRA-M-218-SH-01-0. For example, a reducer flange is shown in zone C-4 of the drawing and appears to restrict flow to the associated fire hose station. A blind flange is shown in zone F-6 in the reactor auxiliary bay. "Street box" housing is indicated in zone E-2. An unknown function or component is indicated by small trapezoid symbols shown mainly in headers upstream of hose stations in several buildings. An unknown function or component is indicated by a semi-circle symbol in zone F-4 located along a 2.5-inch line upstream of two hose stations in the reactor building. Please confirm and explain whether these components should be included in Table 2.3.3-9, as passive components within scope for license renewal and subject to an AMR. If not, please justify the exclusion.

RAI 2.3.3.9-4

LRA Table 2.3.3-9 excludes several types of FP Water System components that appear in the SE and its supplements and/or UFSAR, and which also appear in the LRA drawings colored in orange. These components are listed below.

- hose station
- hose connections
- pipe fittings
- couplings
- threaded connections
- restricting orifices
- interface flanges
- chamber housing
- actuator housing (e.g., weight releasing cabinet housing)

For each, please determine whether the component should be included in Table 2.3.3.9, and if not, please provide the basis for the exclusion.

RAI 2.3.3.9-5

LRA Table 2.3.3-9 excludes other component types such as gear boxes, gauge snubbers, etc. Please determine whether these and/or additional component types are in scope and subject to an AMR, and should be included in Table 2.3.3-9. If not, please justify the exclusion.

RAI 2.3.3.9-6

LRA Tables 2.4-2, 2.4-3, 2.4-4, and 2.4-6 exclude noncombustible shields and curbs (and scuppers) from the list of structural FP components in scope for license renewal and subject to an AMR. Section 3.1.11 of the SE discusses the use of noncombustible shields between feedwater pumps to prevent oil release from one pump impinging on the other pumps. Sections 3.1.11 and 4.8 of the SE discuss the use of curbs (and scuppers) in the diesel oil day tank rooms to contain potential oil spills and prevent them from spreading to other fire areas in the event of an oil fire. Please determine whether noncombustible shields and curbs (and scuppers) should be included as components in scope for license renewal and subject to an AMR.

RAI 2.3.3.9-7

LRA Table 2.4-6 excludes smoke seals and fire retardant coatings from the list of structural bulk commodities components in scope for license renewal and subject to an AMR. The SE supplement dated March 24, 1988, discusses the installation of smoke seals in electrical conduits that pass through fire barriers and between fire areas. Sections 3.2.4 and 4.11 of the SE discuss the use of fire retardant coatings to protect polyvinyl chloride jacketed cables where the cables are not installed in enclosed cable trays. Please determine whether these two components should be in scope and subject to an AMR, and justify exclusion if they are out of scope.

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 3, 1862. It is a very important document, as it contains the President's views on the state of the Union and the progress of the war.

2. The second part of the document is a report from the Secretary of the War Department, dated January 10, 1862. It contains a detailed account of the military operations of the Army during the year 1861, and a statement of the condition of the Army at the beginning and end of the year.

3. The third part of the document is a report from the Secretary of the Navy Department, dated January 10, 1862. It contains a detailed account of the naval operations of the Navy during the year 1861, and a statement of the condition of the Navy at the beginning and end of the year.

4. The fourth part of the document is a report from the Secretary of the Department of the Interior, dated January 10, 1862. It contains a detailed account of the operations of the Department during the year 1861, and a statement of the condition of the Department at the beginning and end of the year.

5. The fifth part of the document is a report from the Secretary of the Department of the Treasury, dated January 10, 1862. It contains a detailed account of the operations of the Department during the year 1861, and a statement of the condition of the Department at the beginning and end of the year.

6. The sixth part of the document is a report from the Secretary of the Department of the Army, dated January 10, 1862. It contains a detailed account of the operations of the Department during the year 1861, and a statement of the condition of the Department at the beginning and end of the year.

RAI 2.3.3.9-8

Section 4.3.5 of the SE discusses automatic water spray for the main power transformer, auxiliary transformer, and shutdown transformer. However, LRA drawing LRA-M-218-SH-01-0 and LRA-M-218-SH-05-0 show the Main Transformer Sprinkler System, Auxiliary Transformer Sprinkler System, Startup Transformer Sprinkler System, and Shutdown Transformer Sprinkler System, as out of scope of license renewal and AMR. Please confirm and explain whether these transformer sprinkler systems should be within scope for license renewal and subject to an AMR.

RAI 2.3.3.9-9

Section 4.3.5 of the SE states that new sprinkler systems were proposed for the radwaste truck loading area and the access control area of the radwaste and control building. PNPS UFSAR Section 10.8.3.1 identifies sprinkler system FP for the access control area (i.e., wet pipe) and the radwaste truck lock area (i.e., dry pipe). However, the LRA drawing LRA-M-218-SH-01-0 shows these areas as out of scope. Please clarify whether these systems are in scope for license renewal and subject to an AMR.

RAI 2.3.3.9-10

Section 4.8 of the SE discusses floor drains provided in all plant areas protected with fixed water fire suppression. LRA Section 2.3.3.9 states that structural FP components are reviewed in the structural evaluation for the building in which they are contained or in the structural bulk commodities review. However, LRA Tables 2.4-2, 2.4-3, 2.4-4, and 2.4-6 do not list floor drains as a FP component in scope for license renewal or an AMR. Should floor drains be included in scope for license renewal and subject to an AMR? If not, please provide justification for the exclusion.

Section 2.3.3.10 Fire Protection System—Halon

RAI 2.3.3.10-1

LRA drawing LRA-M-218-SH-04-0 shows a manual pneumatic actuator colored in purple (i.e., in scope). However, the actuator housing is not listed in LRA Table 2.3.3-10. Please clarify whether actuator housings are in scope and subject to an AMR. If not, please justify the exclusion.

RAI 2.3.3.10-2

Section 4.4 of the SE discusses carbon dioxide as a fixed fire suppression system for the cable spreading room, turbine building tank, and hose reels in the switchgear area, reactor feed pump area, and generator area. SE supplements discuss conversion of the carbon dioxide fixed suppression capability to a Halon fixed suppression capability for the cable spreading room and switchgear area. The status of the other areas (i.e., the turbine building tank and the hose reels in the reactor feed plump and generator areas) is unclear. Please clarify whether fixed suppression exists for these other areas. If there is suppression, please describe the type of suppression provided and explain whether it is in scope and why.

1. The first part of the paper is devoted to a discussion of the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

2. In the second part of the paper, the author discusses the problem of the structure of the nucleus. It is shown that the structure of the nucleus is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

3. The third part of the paper is devoted to a discussion of the problem of the structure of the molecule. It is shown that the structure of the molecule is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

4. The fourth part of the paper is devoted to a discussion of the problem of the structure of the crystal. It is shown that the structure of the crystal is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

5. The fifth part of the paper is devoted to a discussion of the problem of the structure of the solid. It is shown that the structure of the solid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

6. The sixth part of the paper is devoted to a discussion of the problem of the structure of the liquid. It is shown that the structure of the liquid is determined by the laws of quantum mechanics, and that the laws of quantum mechanics are based on the principle of the uncertainty of the position and momentum of the particles.

RAI 2.3.3.10-3

Section 4.4 of the SE states that a total flooding Halon extinguishing system will be installed for the computer and storage room, and PNPS FSAR Section 10.8.3.2 discusses automatic Halon suppression for the plant computer room and O&M building record storage vault. However, the LRA drawing LRA-M-218-SH-04-0, does not show the computer and storage room as in scope for license renewal and subject to an AMR. Furthermore, LRA Section 2.3.3-10 states that only passive mechanical components in the cable spreading room Halon system are required for compliance with 10 CFR 50.48 (fire protection regulations). However, please clarify whether these other areas are protected with automatic Halon suppression.

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WASHINGTON, D.C. 20555-0001

July 31, 2006

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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These relate to Section 2.5 Scoping and Screening results: Electrical and Instrumentation and Control Systems.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

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**REQUESTS FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SECTION 2.5**

1. License renewal application (LRA) Section 2.5 states that the basic philosophy used in the electrical and instrumentation and control (I&C) components in the integrated plant assessment (IPA) was that components are included in the review unless they are specifically screened out. When used with the plant spaces approach, this method eliminates the need for unique identification of every component and its specific location. Also, it states that during the IPA, commodity groups and specific plant systems were eliminated from further review as the intended functions of commodity groups were examined. (1) Identify all the components that were screened out and provide a basis used for doing so. (2) Were all plant spaces evaluated under this methodology? If any spaces were excluded from evaluation, identify those spaces that were excluded and provide the reason why each space was excluded. (3) Identify commodity groups and specific plant systems that were eliminated from further review and provide a basis used for doing so.
2. LRA Section 2.5 states that fuse holders with metallic clamps are either part of a complex active assembly or part of circuits that perform no license renewal intended function. Where as in Table 2.5-1, fuse holder insulation material is identified as electrical and I&C components subject to aging management review (AMR). Confirm that Pilgrim Nuclear Power Station does not use fuse holders (with metallic clamps or bolted connection type) that are not part of a larger assembly, but support safety-related and non safety-related functions in which the failure of a fuse precludes a safety function from being accomplished [10 CFR Part 54.4(a)(1) and (a)(2)] and revise Table 2.5-1 accordingly.
3. LRA Section 2.5 states that electrical cables and connections subject to 10 CFR 50.49 environmental qualification (EQ) requirements are not subject to AMR since the components are replaced based on qualified life. Confirm that all electrical cables and connections subject to 10 CFR 50.49 EQ requirements are replaced based on qualified life (current licensing basis is 40 years).

Enclosure

2015-2016

1. Introduction

The purpose of this report is to provide a comprehensive overview of the company's performance during the 2015-2016 fiscal year. The report covers various aspects of the business, including financial performance, operational efficiency, and market trends. The data presented here is based on internal company records and external market research.

The report is organized into several sections, each focusing on a different aspect of the business. The first section provides an overview of the company's financial performance, followed by a detailed analysis of operational efficiency. The final section discusses market trends and the company's strategic outlook for the future.

The company's financial performance was strong throughout the year, with revenue increasing by 15% compared to the previous year. This growth was driven by a combination of factors, including increased sales volume and higher profit margins. The company's operational efficiency also improved, with production costs decreasing by 10%.

Market trends indicate a continued focus on innovation and customer satisfaction. The company's strategic outlook for the future is optimistic, with a focus on expanding into new markets and developing new products.

The company's financial performance was strong throughout the year, with revenue increasing by 15% compared to the previous year. This growth was driven by a combination of factors, including increased sales volume and higher profit margins. The company's operational efficiency also improved, with production costs decreasing by 10%.

Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 31, 2006

Mr. Michael Kansler
President
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White Plains, NY 10601-1839

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address license renewal scoping and screening aspects for reactor coolant system (Section 2.3.1), engineered safety features (Section 2.3.2), and auxiliary systems (Section 2.3.3).

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

REQUESTS FOR ADDITIONAL INFORMATION (RAIs)
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SECTIONS 2.3.1, 2.3.2 and 2.3.3

2.3.1.1 Reactor Vessel

RAI 2.3.1.1-1

In Table 2.3.1-1 of the license renewal application (LRA), the reactor vessel leakage monitoring piping was not identified as a component within scope requiring an aging management review (AMR). The staff requests the applicant to identify the subject components within scope, because it is considered as part of the pressure boundary, and accordingly, it should be within the scope of license renewal and subject to AMR. If, however, the applicant believes that the components do not require an AMR, then they should provide plant-specific justification based on the description of the subject components, or any other relevant information, as to why the components need not be subjected to an AMR.

RAI 2.3.1.1-2

The staff believes that the scram discharge piping and volume should be in scope requiring aging management. However, it appears that the subject component was not identified in Table 2.3.1-1 of the LRA. Please justify.

RAI 2.3.1.1-3

The staff understands that the CRD Housing Supports (CRDHS) limit the travel of a control rod in the event that a control rod housing is ruptured. The supports prevent a nuclear excursion as a result of a housing failure, thus protecting the fuel barrier, and limiting radioactive releases. In addition, following a postulated failure of the drive housing at the attachment weld at the same time the control rod is withdrawn, and if the collet were to stay unlatched, the housing would separate from the vessel, and the drive and housing would be blown downward against the CRDHS. If credit is taken for the CRDHS; and since, the CRDHS are passive and long-lived, the staff believes that the subject components should be within the scope of license renewal requiring aging management. It appears, however, that the subject components and their intended function of limiting travel of the control rod following control rod housing rupture have not been identified in Table 2.3.1-1 of the LRA. Therefore, the staff requests the applicant to provide an explanation.

2.3.1.2 Reactor Vessel Internals (RVI)

RAI 2.3.1.2-1

In Section 2.3.1.2, "Reactor Vessel Internals," it was stated that RVI include local power range monitors. The staff understands that the neutron monitoring system (NMS) includes additional neutron monitors, such as, intermediate range monitors, rod block monitors, etc.; and these monitoring circuits, along with their electrical cables should be within scope of license renewal requiring aging management. The staff also noted that in Table 2.2-1b of the LRA, it was

Enclosure

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DEPARTMENT OF CHEMISTRY

REPORT OF THE
COMMISSIONERS OF THE BOARD OF TRUSTEES

FOR THE YEAR ENDING
JUNE 30, 1900

CHICAGO, ILL.,
JULY 1, 1900

THE UNIVERSITY OF CHICAGO
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indicated that a bounding approach was used for the NMS. The staff requests the applicant to clarify which neutron monitors and the related cables are considered within scope based on the bounding approach.

2.3.2.1 Residual Heat Removal System

RAI 2.3.2.1-1

The low pressure coolant injection coupling was identified in the Boiling Water Reactor Vessel and Internals Project (BWRVIP)-06 report as a safety-related component. It appears, however, that the component was not identified in Table 2.3.2-1 of the LRA requiring an AMR. If the component exists at Pilgrim Nuclear Power Station, then the staff requests the applicant to justify its exclusion from aging management; otherwise, submit an AMR for the subject component.

RAI 2.3.2.1-2

Please clarify whether the passive components, namely, vortex breakers used in pump suction lines, which could be located inside the emergency core cooling system tanks or in the sump, and whose intended functions are to protect the pumps from cavitation, are subject to an AMR. If so, identify which of these tanks are equipped with such passive components, and where in the LRA are the AMRs for these components, or provide justifications for exclusion of these components from AMRs.

2.3.2.4 & 2.3.2.5 High Pressure Coolant Injection(HPCI) & Reactor Core Isolation Cooling (RCIC)

RAI 2.3.2.4-1

The steam supply and return lines for HPCI and RCIC perform safety functions, and therefore, should be in scope of license renewal in accordance with 10 CFR 50.4(a)(1). The staff requests the applicant to clarify whether the subject components are in scope requiring an AMR.

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF PHYSICS

REPORT OF THE
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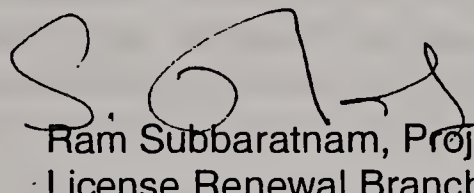
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These questions were discussed with a member of your staff, Brian Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,


Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc: See next page

THE [illegible] OF [illegible]

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REQUEST FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
BALANCE-OF-PLANT COMPONENTS

2.2: Plant Level Scoping Results

RAI-2.2-1

In licensing renewal application (LRA) Tables 2.2-1a and 2.2-2, the applicant identifies a listing of mechanical systems within the scope of license renewal and mechanical systems not within the scope of license renewal, respectively. The applicant identifies, in the first column of both tables, the system number, and in several cases, multiple system numbers for each corresponding system name. In LRA Section 2.2, third paragraph, the applicant states that the list of systems used in these tables and determination of system boundaries is based on maintenance rule scoping documents, the Q list, plant drawings, the [updated final safety analysis report] (UFSAR), and system design basis documents reviewed during scoping.

It is not clear whether all mechanical systems that are described in the UFSAR are included in the mechanical systems names contained in LRA Tables 2.2-1a and 2.2-2. In order to facilitate the staff's plant level scoping review, provide a complete cross reference list of mechanical systems names against system numbers and the specific source used for this cross reference.

RAI-2.2-2

In LRA Table 2.2-2, the applicant identifies the electrolytic hydrogen water chemistry system as a mechanical system not within the scope of license renewal, and identifies UFSAR Sections 10.21 and 10.22 as the reference for the system description.

In UFSAR Section 10.22.7.4, Limiting Transient Consequence, the applicant describes those hydrogen leaks that do not initiate automatic shutdown of the electrolytic hydrogen water chemistry system (EHWCS). The applicant states in the UFSAR that small leaks cannot lead to an accumulation of an explosive mixture of hydrogen and oxygen because the condenser bay and turbine buildings have sufficient forced ventilation to avoid combustible mixtures. The applicant, therefore, appears to be crediting the turbine building HVAC system to prevent an explosive mixture in the condenser bay and turbine buildings.

However, in LRA Section 2.3.3.11, the applicant does not identify this feature as an intended function for the turbine building HVAC system. Therefore, it is conceivable that an explosive mixture could accumulate, and potentially cause an explosion that could damage nearby equipment, some of which may be safety-related.

Justify the exclusion of the EHWCS from the scope of license renewal, or include the system in scope because of a 10 CFR 54.4(a)(2) effect, where a nonsafety related system such as EHWCS could detonate and prevent satisfactory accomplishment of safety-related structure, system and components which are relied upon to remain functional during and following design-basis events.

ENCLOSURE

Appendix A

Table A.1

Table A.1: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

Table A.2: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

Table A.3: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

Table A.4: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

Table A.5: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

Table A.6: Summary of the results of the analysis. The table shows the mean and standard deviation of the variables used in the analysis. The variables are: Age, Sex, Education, Income, and Health. The mean and standard deviation are calculated for each variable.

2.3: Scoping and Screening Results: Mechanical Systems

2.3.3.2: Salt Service Water System

RAI-2.3.3.2-1

In LRA Section 2.1.2.1.3, the applicant states that the highlighting on the license renewal drawing indicates components subject to aging management review [(AMR)]. License Renewal drawing LR-M-212, sheet 1 shows the sluice gates (locations A-8 and A-3) and slide gate (location A-5) highlighted. However, they do not appear to be listed on LRA Table 2.3.3-2 as being subject to AMR. Clarify if these gates are listed on table 2.3.3-2 as being subject to AMR.

RAI-2.3.3.2-2

On page 10.7-2a of the FSAR, the applicant states, "to ensure that the safety design basis in Section 10.7.2 is achieved, flow condition is improved by the addition of baffle plates in the west side service water bay and a rear sluice gate allows maintenance and operational flexibility."

This statement implies that the baffle plates have an intended function in accordance with 10 CFR 54.4(a) and should therefore be within the scope of license renewal. Baffle plates are not shown on drawing LR-M-212-SH-01, nor do they appear to be listed on table 2.3.3-2. Clarify if the baffle plates are subject to AMR.

RAI-2.3.3.2-3

LRA Section 2.0, states that "the term 'piping' in component lists may include pipe, pipe fittings (such as elbows and reducers), flow elements, orifices, and thermowells." On drawing LR-M-212, sheet 1, air vents (locations B-8, 7, 6, 5 and 4), were found as being subject to AMR. The air vents downstream piping and a portion of the air vents will have a normal internal environment of air. It is assumed that air vents are included in LRA Table 2.3.3-2 under component type piping. However, when reviewing LRA Table 3.3.2-2, the staff noted that there is no listing for piping with an internal environment of air.

Clarify whether the air vents and their downstream piping are included in component type "piping" and are subject to AMR, or add them to LRA Tables 2.3.3-2 and 3.3.2-2.

2.3.3.3: Reactor Building Closed Cooling Water System

RAI 2.3.3.3-1

License renewal drawings for the reactor building closed cooling water (RBCCW) system show that flexible hoses are within the scope of license renewal in accordance with 10 CFR 54.4 (a), and subject to an AMR in accordance with 10 CFR 54.21 (a).



Flexible hoses that appear on license renewal drawing LRA-M-215-SH-01 provide an intended function of pressure boundary and connect MG set area cooling coils VAC-207A, -207B, -207C, and -207D to the RBCCW system. Flexible hoses that appear on license renewal drawing LRA-M-215-SH-02 provide an intended function of pressure boundary and connect Core Spray Pump Motor Thrust Bearing P-215B cooling coils, RHR Pump Area Cooling Coils VAC-204C/D, and HPCI Pump Area Cooling Coils VAC-201A/B to the RBCCW system. Flexible hoses that appear on license renewal drawing LRA-M-215-SH-04 provide an intended function of pressure boundary and connect RCIC Pump Area Cooling Coils VAC-202A/B, Control Rod Drive Pump Area Cooling Coils VAC-203A/B, Clean-Up Recirc Pump P-204A/B Cooling System, RHR Pump Area Cooling Coils VAC-204A/B, and Core Spray Pump Motor Thrust Bearing P-215A cooling coils to the RBCCW system.

LRA Section 2.1.2.1.3 states that flexible hoses that are periodically replaced (not long-lived) and therefore not subject to aging management, are indicated on the drawings. These components are not specifically identified on the drawings as "not a long-lived component" and there are no flexible hoses listed as a component type in LRA Table 2.3.3-3.

Justify the exclusion of flexible hoses as a component type from LRA Table 2.3.3-3. If not, include flexible hoses in LRA Table 2.3.3-3 and describe their aging management program (AMP) in LRA Table 3.3.2-3.

RAI 2.3.3.3-2

Flow elements FE-6265, FE-6267, FE-9014, FE-6263, and FE-6269 on license renewal drawings LRA-M-215-SH-01 at location E-8, LRA-M-215-SH-02 at location G-5/6, LRA-M-215-SH-03 at location E-4, and LRA-M-215-SH-04 at location C-7/8 respectively, are shown as included within the scope of license renewal for the RBCCW system and subject to an AMR. The flow elements control flow to create a pressure differential signal that is interpreted by their associated flow transmitters to control the system's intended functions.

There are no orifices listed as a component type in LRA Table 2.3.3-3 with an intended function of flow control. LRA Table 2.0-1 identifies a component intended function for flow control (FC) that is applicable to the flow elements.

Justify the exclusion of flow control as an intended function for flow elements in LRA Table 2.3.3-3 as a component intended function requiring aging management.

RAI 2.3.3.3-3

Y-strainers-4074 and 4078 on license renewal drawings LRA-M-215-SH-01 at location B-5 and LRA-M-215-SH-02 at location C/D-4 respectively, are shown as included within the scope of license renewal for the RBCCW system and subject to an AMR. The y-strainers perform a filtration intended function (FLT) to remove particulates from the treated water.

There are no strainers listed as a component type in LRA Table 2.3.3-3 with an intended function of filtration. LRA Table 2.0-1 identifies a component intended function for filtration (FLT) that is applicable to the y-strainers.



Justify the exclusion of filtration as an intended function for the y-strainers in LRA Table 2.3.3-3 as a component intended function requiring aging management.

RAI 2.3.3.3-4

Restricting orifices RO-4019 and RO-4017 on license renewal drawings LRA-M-215-SH-01 at location B-5 and LRA-M-215-SH-02 at location C/D-4 respectively, are shown as included within the scope of license renewal for the RBCCW system and subject to an AMR. The restricting orifices perform a flow restriction intend function (FC) to ensure proper system operation.

There are no restricting orifices listed as a component type in LRA Table 2.3.3-3 with an intended function of flow restriction. LRA Table 2.0-1 identifies a component intended function for flow control (FC) that is applicable to restricting orifices.

Justify the exclusion of flow control as an intended function for the restricting orifices in LRA Table 2.3.3-3 as a component intended function requiring aging management.

2.3.3.4: Emergency Diesel Generator System

RAI 2.3.3.4-1

Section 10.9.3.9 of the Pilgrim UFSAR states that "engine freeze protection is provided by the jacket water cooling system heater..." This heater is not shown on the referenced license renewal drawings, nor is it listed in LRA Table 2.3.3-4 as a component subject to an AMR. This heater provides a pressure boundary for the jacket water cooling system, and therefore, should be within the scope of license renewal. Additionally, the pressure retaining portion of the heater is a passive, long-lived component, and therefore, should be subject to AMR. Justify the exclusion of this component from an AMR.

RAI 2.3.3.4-2

License renewal drawing LRA-M-272-0 shows two aftercoolers at locations F/G-5 and B/C-5 as being within the scope of license renewal and subject to an AMR. The aftercoolers provide a pressure boundary and heat transfer intended function. However, aftercooler does not appear in LRA Table 2.3.3-4 as a component type subject to an AMR.

Confirm that aftercooler is a component type that is subject to an AMR, and is included within the component type of heat exchanger. If not, justify the exclusion of this component from an AMR.

RAI 2.3.3.4-3

License renewal drawing LRA-M-272-0 shows two turbochargers at locations A-6 and E-6 as being within the scope of license renewal and subject to an AMR since it provides a pressure boundary. LRA Table 2.3.3-4 lists the turbocharger housing as a component subject to an AMR, and correspondingly, LRA Table 3.3.2-4 lists the turbocharger material and environment. LRA Section 2.3.3.4 and license renewal drawing LRA-M-272-0 indicate that the turbocharger is cooled by the jacket water cooling system.

However, LRA Tables 2.3.3-4 and 3.3.2-4 do not list "heat transfer" as an intended function, and treated water as an internal environment, respectively.

Explain why "heat transfer" is not listed as an intended function of the turbocharger. Also, explain why the cooling water of the jacket cooling water system is not listed as an internal environment for the turbocharger.

RAI 2.3.3.4-4

Flexible hose and flexible connections are shown on the following license renewal drawings at the given locations as being within the scope of license renewal and subject to an AMR.

- a. License renewal drawing LRA-M-271-0 at locations C-5, C-6, F-5, and F-6.
- b. License renewal drawing LRA-M-259-0 at locations F-1, F-2, F-5 and F-6.

LRA Section 2.1.2.1.3 states that flexible hoses that are periodically replaced (not long-lived) and therefore not subject to aging management, are indicated on the drawings. These components are not specifically identified on the drawings as "not a long-lived component." These flexible connections or hoses provide a pressure boundary in the turbo air assist system and lube oil system. LRA Table 2.3.3-4 lists expansion joint (exhaust flex joint) as a component type subject to an AMR; however, LRA Table 3.3.2-4 does not have indoor air or lube oil as an internal environments.

Confirm that the flexible connections and hoses in question are long-lived, and therefore subject to an AMR. If so, confirm that the material and environment are subject to the appropriate AMP.

RAI 2.3.3.4-5

License renewal drawing LRA-M-272-0 indicates that the emergency diesel generator (EDGs) are equipped with crankcase exhausters (see locations B-7 and F-7). Failure of this exhauster can adversely impact the function of the EDGs. The exhauster is not depicted on the drawing as a component that is subject to an AMR. Explain why the exhausters in question are not subject to an AMR.

RAI 2.3.3.4-6

License renewal drawing LRA-M-272-0 shows jacket water radiators at locations C-2 and G-2 as being within the scope of license renewal and subject to an AMR since they provide a pressure boundary. Pilgrim UFSAR Section 10.9.3.9 states that, "The EDG jacket water pump circulates the engine coolant through the radiator tubes where it transfers engine heat to the air. The engine driven fan draws suction through each of the parallel radiators and discharges the heated air through a cylindrical discharge duct which exits at the roof." LRA Tables 2.3.3-4 and 3.3.2-4 contain entries for heat exchanger bonnet, shell, and tubes. However, there does not appear to be an entry for the radiator fins.

State whether the jacket water radiators contain fins for heat transfer. If so, state whether the fins are subject to an AMR. If not, justify the exclusion of this component type from an AMR.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study. It includes information about the sample size, the data collection methods, and the statistical analysis techniques.

3. The third part of the report is a discussion of the results of the study. It presents the findings of the research and compares them with the previous studies in the field.

4. The fourth part of the report is a conclusion and a list of references. The conclusion summarizes the main findings of the study and provides recommendations for future research.

5. The fifth part of the report is an appendix containing additional information related to the study, such as the raw data, the questionnaires, and the interview transcripts.

6. The sixth part of the report is a bibliography listing all the sources used in the study. It includes books, articles, and other references that are relevant to the research.

2.3.3.5: Station Blackout Diesel Generator System

RAI 2.3.3.5-1

On license renewal drawing LRA-M-264-0, the applicant shows the following components as being within the scope of license renewal and subject to an AMR. These components provide the intended function of pressure boundary.

- a. starting rack booster housing at location F-6
- b. jacking gear air interrupter at location G-6
- c. deaerator housing at location H-3
- d. air cleaner housing at location E-4
- e. drain trap at location F-7

However, these components are not specifically listed in LRA Table 2.3.3-5 as components subject to an AMR. Confirm that these components are subject to an AMR. If not, justify the exclusion of the component(s) from an AMR.

RAI 2.3.3.5-2

On license renewal drawing LRA-M-264-0, the applicant shows a turbocharger at location H-3 as being within the scope of license renewal and subject to an AMR since it provides a pressure boundary. LRA Table 2.3.3-5 lists the turbocharger housing as a component subject to an AMR, and correspondingly, LRA Table 3.3.2-5 lists the turbocharger material and environment. LRA Section 2.3.3.5 and license renewal drawing LRA-M-264-0 indicate that the turbocharger is cooled by the jacket water cooling system. However, LRA Tables 2.3.3-5 and 3.3.2-5 do not list "heat transfer" as an intended function, and treated water as an internal environment, respectively.

Explain why heat transfer is not listed as an intended function of the turbocharger. Also, explain why the cooling water of the jacket cooling water system is not listed as an internal environment for the turbocharger.

RAI 2.3.3.5-3

Flexible connections are shown on license renewal drawing LRA-M-264-0 at locations E-3, F-3, G-3, F-5/6, H-5, and G-7 as being within the scope of license renewal and subject to an AMR. These components are not specifically identified on the drawing as "not a long-lived component."

In LRA Section 2.1.2.1.3, the applicant states that flexible hoses that are periodically replaced (not long-lived) and therefore not subject to aging management, are indicated on the drawings.

These flexible connections provide the intended function of pressure boundary. LRA Table 2.3.3-5 does not list flexible hose or connections as a component type subject to an AMR. Confirm that the flexible connections in question are long-lived, and therefore subject to an AMR. If not, justify the exclusion of these components from an AMR.

RAI 2.3.3.5-4

On license renewal drawing LRA-M-264-0, the applicant shows jacket water immersion heaters at location G-2. The heaters are part of the jacket cooling water system which is a closed cooling water loop. Therefore, the heaters provide a pressure boundary. LRA Table 2.3.3-5 does not include the pressure retaining portion of the heaters as a component subject to an AMR. Justify the exclusion of this component from an AMR.

2.3.3.7: Fuel Oil System

RAI-2.3.3.7-1

In License Amendment 184 to the Pilgrim Facility Operating License, the licensing basis for the on-site fuel storage requirements for the EDG was modified. In addition, Technical Specification Bases were amended to reflect the new licensing basis. This change increased the amount of diesel fuel required to be stored on-site to assure sufficient supply of fuel oil to the EDGs from the EDG and Station Blackout Diesel Generator (SBODG) storage tanks. The Safety Evaluation Report to the License Amendment states that "the SBODG storage tanks are not connected to the EDG storage tanks and will require operator action to transfer fuel from the SBODG tanks to the EDG storage tank...The licensee's method of supplying fuel oil from the SBODG tanks to the EDG tanks requires the attachment of connections, hoses, and an air-powered pump to refill the EDGs from the SBODGs when needed. The required fittings and hardware accessories for refilling operations are prestaged and dedicated for the task."

This equipment provides functional support for the EDG which is safety-related equipment. Therefore, this transfer equipment should be within scope of license renewal and subject to an AMR. Verify that passive, long-lived components of this equipment are included in Table 2.3.3-7 and subject to AMR.

RAI- 2.3.3.7-2

In UFSAR Section 8.5.2, the applicant describes a hydroturbine that drives backup diesel fuel transfer pump (P-181). This pump is a redundant diesel fuel oil transfer pump for the diesel fire pump P-140. In LRA Section 2.3.3.14 (page 2.3-65), the applicant states, "Unless specifically excluded, all non-safety-related components in a system determined to be in scope for 54.4(a)(2) for spatial interaction are subject to AMR. Components are excluded from review if their location is such that safety-related equipment cannot be impacted by component failure." Based on the above information, it appears that pump P-181 should be within the scope of license renewal for purposes of 10 CFR 54.4(a)(2). In LRA Tables 2.3.3-14-13 and 3.3.2-14-13, Fuel Oil Storage and Transfer System Nonsafety Related Components affecting Safety Related Systems Components Subject to an AMR, the applicant has an entry for component type pump casing, with appropriate material and environment combination that is subject to an AMR.

However, in LRA Tables 2.3.3-14-12 and 3.3.2-14-12, Fire Protection System Nonsafety Related Components affecting Safety Related Systems Components Subject to an AMR, the applicant does not include component type pump casing with appropriate material and environment combination that is subject to an AMR. Justify the exclusion of the hydroturbine portion of the diesel fire pump (P-181) from the scope of license renewal.

RAI 2.3.3.7-3

License renewal drawing LRA-M-264-0, Note 15 states that "there is a rain tight lid under manhole cover..." LRA Tables 2.3.3-7 and 3.3.2-7 contain entries for component type "tank." However, there does not appear to be an entry for the rain tight lid. State whether the rain tight lid is composed of a different material than indicated for the component type "tank." If so, state whether the lid is subject to an AMR. If not, justify the exclusion of this component type from an AMR.

RAI 2.3.3.7-4

License renewal drawing LRA-M-264-0 at locations A-6 and A-8 show ladders and check valves (38-CK-168A and 38-CK-168B) as components not subject to an AMR. Additionally, at locations A-6 and A-7, there are 4 inch "FRP" lines that are not shown as subject to an AMR.

State whether failure of these internal components could prevent the station blackout diesel fuel oil storage tanks from performing their intended function.

2.3.3.8: Compressed Air (Instrument Air) System

RAI 2.3.3.8-1

In LRA section 2.3.3.8 for the Compressed Air (Instrument Air) System, the applicant states the following on page 2.3-41: "The instrument air system contains separate accumulators and tanks that store high pressure air or nitrogen for operation of safety-related equipment (main steam safety valves, nuclear system pressure relief valves, torus vacuum breakers, standby gas treatment system dampers, and EDG dampers)." License renewal drawings LRA-M-220-SH-03 and LRA-M-252-SH-01 have been reviewed and there are no instrument air components indicated within the scope of license renewal in accordance with 10 CFR 54.4 associated with main steam safety valves. However, on drawing LRA-M-252-SH-01 there are instrument air components indicated within the scope of license renewal and subject to an AMR in accordance with 10 CFR 54.21(a) associated with the four inboard and four outboard "main steam isolation valves."

Explain why "main steam safety valves" are listed in the above sentence from the LRA instead of inboard and outboard "main steam isolation valves." If instrument air components associated with the main steam safety valves are in the scope of license renewal and subject to AMR, provide a drawing they are shown on.

RAI 2.3.3.8-2

In LRA section 2.3.3.8 for the Compressed Air (Instrument Air) System, the applicant states the following on page 2.3-42: "Additional details for the components subject to aging management review are provided in the following license renewal drawings." One of the license renewal drawings listed is LRA-M-250-SH-01 for the Control Rod Drive Hydraulic System. PCV's 302-89A (location A-5), 302-89B (location B-5), and 302-89C (location B-5), and SV's 302-26A (location G-6) and 302-26B (location F-6) on license renewal drawing LRA-M-250-SH-01 have a system intended function boundary flag at each end of the valve symbol pointing toward the valve. However, there are no instrument air system components color coded to indicate that they are subject to AMR.

Explain how these six valves alone by themselves perform an intended function in accordance with 10 CFR 54.4 and yet are not subject to an AMR in accordance with 10 CFR 54.21(a).

RAI 2.3.3.8-3

On license renewal drawing LRA-M-67-96 at location D-2, the applicant shows an instrument air system line color coded as within the scope of license renewal and subject to AMR. Also shown at this location, the applicant indicates the instrument air line continues onto license renewal drawing LRA-M-219 at location F-5. A review of drawing LRA-M-219 at location F-5 does not find a drawing reference continuation flag indicating drawing LRA-M-67-96 and location D-2.

Clarify the instrument air system license renewal boundary interface between license renewal drawing LRA-M-219 at location F-5 and license renewal drawing LRA-M-67-96 at location D-2.

RAI 2.3.3.8-4

In FSAR Section 10.11, Instrument and Service Air Systems, on page 10.11-2, the applicant states the following: "A 3" back-up air supply system was added to the Instrument Air system, tying into the permanent plant hardpipe connection from the outside of the turbine building where it is connected to a diesel driven oil-free air compressor. This back-up source of instrument air is used for station black-out conditions and/or to provide additional air for times when the system is not available due to maintenance."

Justify the exclusion of the intended function for 10 CFR 54.4(a)(3) of supporting backup source of instrument that is credited in Station Blackout (SBO) regulations (10 CFR 50.63) from LRA Section 2.3.3.8, or include this system intended function. Identify and provide the drawing number where the SBO 3" back-up air supply system is depicted.



2.3.3.13: Fuel Pool Cooling and Fuel Handling and Storage Systems

RAI 2.3.3.13-1

On license renewal drawing LR-M-241-SH-01 for the Fuel Pool Cooling and Fuel Handling and Storage system, the applicant shows that spectacle flange RO-1001-75 is installed to utilize augmented fuel pool cooling (AFPC). In FSAR Sections 4.8.5 and 10.4, the applicant describes the operation of the AFPC modes from the safety related RHR system. The sections describe the system inter-tie and the consequences of a postulated pipe break on the RHR system. When placed in service, restricting orifice RO-1001-75 limits flow from the RHR system in the event of a break in the FPC piping. The mitigation of the subsequent drain down of the reactor basin requires operator action. The time to accomplish the actions is based on the flow from the FPC pipe break.

Based on the FSAR information, the staff believes that RO-1001-75 supports RHR system intended functions by providing flow control. Therefore RO-1001-75 when placed in service meets criteria 10 CFR 54.4 (a)(2) for functional support to a safety related system, with a component intended function of flow control.

Neither LRA Table 2.3.3-13 nor 2.3.3-14-14 include a component type of orifice with an intended function of flow control.

Explain the exclusion of flow control as an intended function requiring aging management for the component type orifice.

RAI 2.3.3.13-2

On license renewal drawing LR-M-231-SH 1 for the Fuel Pool Cooling and Fuel Handling and Storage system, the applicant shows that removable screens attached to lines 4"-HE-19 and 3"-HE-19 for the dryer and separator pool and fuel pool gate drains respectively are excluded from AMR. The actual lines are highlighted indicating that they are subject to AMR.

Explain whether the entire screen assembly including the pressure retaining portion is subject to AMR in accordance with 10 CFR 54.4(a), or justify its exclusion.

2.3.4.4: Main Condenser System

RAI 2.3.4.4-1

In FSAR Section 11.3.3, the applicant describes a sight glass level indicator as being located on the outlet of each water box to aid in evaluation of the scavenging system and/or condenser performance. A sight glass level indicator and associated tubing provide the intended function of pressure boundary integrity for the main condenser. Component type sight glass indicator, or "LG" on P&ID Legend drawing M-200-SH 1, does not appear on LRA Table 2.3.4-2.

Justify the exclusion of component type sight glass indicator from being included within the scope of license renewal and subject to an AMR or include it on the LRA Table 2.3.4-2 and 3.4.2-2 with an appropriate AMP.

RAI 2.3.4.4-2

On license renewal drawings LRA-M-203-SH-1 at location C-5, and LRA-M-226-SH 1 at location F-8, the highlighted license renewal boundary ends at normally open valves. Failure of downstream piping can impact the intended function of the system (e.g., pressure boundary).

Justify ending the boundary as highlighted or describe the license renewal boundary on drawings for components downstream that are in the scope of license renewal in accordance with 10 CFR 54.4(a)(2) .

RAI 2.3.4.4-3

In LRA Section 2.0, the applicant states that if components have unique tag numbers or the specific component has a function other than pressure boundary, then flow elements, orifices and thermowells are identified as a separate component type.

On license renewal drawing LRA-M-203-SH-1 at location C-7, the applicant shows a restricting orifice RO-3058, that is highlighted meaning that it is subject to an AMR in accordance with 10 CFR 54.21(a). Although an orifice is listed as a component type in LRA Table 2.3.4-2 with an intended function of pressure boundary, restricting orifices also have a flow control intended function.

Justify excluding the flow control component intended function for the restricting orifice from being subject to AMR, or include it in LRA Tables 2.3.4-2 and 3.4.2-2.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

which are subject to the boundary conditions

where $\mathbf{A}$ and $\mathbf{B}$ are $n \times n$ matrices, $\mathbf{C}$ and $\mathbf{D}$ are $n \times m$ matrices, $\mathbf{F}$ and $\mathbf{G}$ are $n \times 1$ column vectors, and $\mathbf{H}$ and $\mathbf{I}$ are $m \times 1$ column vectors.

The second part of the paper is devoted to a detailed analysis of the problem of the existence of solutions of the system of equations

which are subject to the boundary conditions

Pilgrim Nuclear Power Station

cc:

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4. The final part of the document provides a summary of the key points discussed and offers some concluding remarks. It reiterates the importance of maintaining accurate records and the role of the accounting department in the organization's success.

8. The final part of the document provides a summary of the key points discussed and offers some concluding remarks. It reiterates the importance of maintaining accurate records and the role of the accounting department in the organization's success.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 31, 2006

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601-1839

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address Sections B.1.3 Control Rod Drive Return Nozzle, B.1.26 Reactor Vessel Surveillance Program and time-limited aging analysis aspects for Reactor Vessel Fluence (Section 4.2.1).

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

THE UNIVERSITY OF CHICAGO

CHICAGO, ILL.

1911

TO THE PRESIDENT OF THE UNIVERSITY OF CHICAGO

DEAR SIR:

I have the honor to acknowledge the receipt of your letter of the 14th inst. and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. I am, however, unable to say whether or not they will be able to do so, as they have not yet had time to do so.

I am, Sir, very respectfully,
Yours truly,
[Signature]

Very truly,
[Signature]

Very truly,
[Signature]

REQUESTS FOR ADDITIONAL INFORMATION (RAIs)
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SECTIONS B.1.3, B.1.26 and 4.2.1

B.1.26 Reactor Vessel Surveillance Program

RAI-B.1.26-1

The applicant in the updated final safety analysis report (UFSAR) supplement A.2.1.28, "Reactor Vessel Surveillance Program," and in the aging management program (AMP) B.1.26, "Reactor Vessel Surveillance," states that it will implement the Boiling Water Reactor Vessel and Internals Project (BWRVIP) integrated surveillance program (ISP) at the Pilgrim Nuclear Power Station (PNPS) as specified in BWRVIP-116, "BWR Vessel Internals Project Integrated Surveillance Program Implementation for License Renewal." By letter dated March 1, 2006, the staff has issued the final safety evaluation (SE) for the BWRVIP-116 report and therefore, the staff requests that the applicant include the following statement in UFSAR supplement Section A.2.1.28 and in AMP B.1.26 of the license renewal application (LRA).

"The BWRVIP-116 report which was approved by the staff will be implemented at PNPS with the conditions documented in Sections 3 and 4 of the staff's final SE dated March 1, 2006, for the BWRVIP-116 report."

RAI-B.1.26-2

Title 10 of the Code Federal Regulations Part 50 (10 CFR Part 50), Appendix H requires that an ISP used as a basis for a licensee implemented reactor vessel surveillance program be reviewed and approved by the NRC staff. The ISP to be used by the applicant is a program that was developed by the BWRVIP. The applicant will apply the BWRVIP ISP as the method by which the PNPS unit will comply with the requirements of 10 CFR Part 50, Appendix H. The BWRVIP ISP identifies capsules that must be tested to monitor neutron radiation embrittlement for all licensees participating in the ISP and identifies capsules that need not to be tested (standby capsules). Table 3-3 of the BWRVIP-116 report indicates that the standby capsule from PNPS unit is not to be tested. This untested capsule was originally part of the applicant's plant-specific surveillance program and has received significant amounts of neutron radiation.

The staff requests that the applicant include the following statement in the UFSAR supplement Section A.2.1.28 of the LRA.

"If the PNPS standby capsule is removed from the reactor vessel without the intent to test it, the capsule will be stored in a manner which maintains it in a condition which would permit its future use, including during the period of extended operation, if necessary."

Enclosure

B.1.3-1 Control Rod Drive (CRD) Return Nozzle

RAI-B.1.3-1

Provide information regarding the type of inspection and the inspection frequency of the capped CRD return line nozzle weld overlay during the extended period of operation.

RAI-B.1.3-2

The applicant states that it will take the following exception to the inspection requirements for the CRD return line nozzle weld as mandated by the American Society of Mechanical Engineers (ASME) Code, Section XI.

PNPS proposes to examine ½" of the volume on either side of the widest part of the N10 nozzle-to-vessel weld in lieu of ½ the vessel wall thickness as required by the ASME Code, Section XI, 1998 Edition, 2000 Addenda, Figure IAB-2500-7(b).

The staff requests that the applicant provide information regarding the state of stress that is present in the volume of the subject weld that will not be included in the future examinations. Clarify whether the highly stressed volume of the weld, where cracks can initiate, will be examined effectively with the proposed alternative. The staff believes that the applicant should obtain prior approval from the staff for implementing the proposed alternative examination under the provisions of 10 CFR 50.55a before entering into the extended period of operation. Provide information whether the proposed alternative examination of the CRD return line nozzle weld has previously been submitted to the staff for review and approval for the current ISI interval.

4.2.1 Reactor Vessel Fluence

RAI 4.2.1-1

Section 4.2.1 of the submittal indicates that PNPS used the radiation analysis modeling application code for the calculation of the 54 effective full-power year (EFPY) vessel fluence values. Section 4.2.2 states that recent calculations done per Regulatory Guide 1.190 confirm that the fluence for 54 EFPY is less than the fluence used to calculate the pressure and temperature limits in Reference 4.2-5, "Pilgrim Nuclear Power Station - Issuance of Amendment Re: Pressure-Temperature Limit Curves (TAC NO.MB0561)," letter dated April 13, 2001, Wang, A., to M. Bellamy.

Please provide information to substantiate this statement, preferably in the form of a contractor's report that documented these fluence calculations.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year.

2. The second part of the report deals with the results of the work during the year and the progress of the work during the year.

3. The third part of the report deals with the results of the work during the year and the progress of the work during the year.

4. The fourth part of the report deals with the results of the work during the year and the progress of the work during the year.

5. The fifth part of the report deals with the results of the work during the year and the progress of the work during the year.

6. The sixth part of the report deals with the results of the work during the year and the progress of the work during the year.

Pilgrim Nuclear Power Station

cc:

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THE
FEDERAL
BUREAU OF
INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

TO : DIRECTOR, FBI
FROM : SAC, NEW YORK
SUBJECT: [Illegible]

RE: [Illegible]

1. [Illegible]

2. [Illegible]

3. [Illegible]

4. [Illegible]

5. [Illegible]

6. [Illegible]

7. [Illegible]

8. [Illegible]

9. [Illegible]

10. [Illegible]

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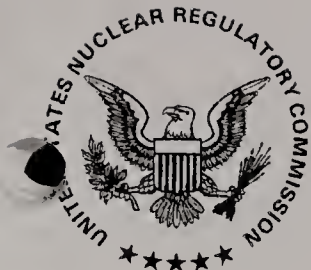
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 14, 2006

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. (Entergy or the applicant), submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These relate to Section 3.5 Structures and Component Supports and 3.6 Electrical and Instrumentation and Control Systems.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over the typed name.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

REQUESTS FOR ADDITIONAL INFORMATION
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
SECTIONS 3.5 STRUCTURES AND COMPONENT SUPPORTS AND
3.6 ELECTRICAL AND INSTRUMENTATION AND CONTROL SYSTEMS

RAI 3.6.2-1

In the license renewal application (LRA), Table 3.6.2-1, under Cable connections (metallic parts), the applicant did not indicate any aging effects and does not credit an aging management program (AMP). In the LRA Table 3.6.1 - Electrical Component under discussion of cable connection metallic parts, the applicant stated that cable connections outside of active devices are taped or sleeved for protection and states operating experience with metallic parts of electrical cable connections at Pilgrim Nuclear Power Station or (PNPS or Pilgrim) does not indicate any aging effects requiring management. Electrical cable connections (metallic parts) are subject to aging effects which include thermal cycling, ohmic heating, electrical transients, vibration, chemical contamination, corrosion, and oxidation. NUREG-1801, Revision 1, AMP XI.E6, "Electrical Cable Connection not Subject to 10 CFR 50.49 Environmental Qualification Requirements," typically include connections associated with cables to be within the scope of license renewal and credits the above AMP. Please clarify how you propose to manage cable connection components during the license extension for the aging effects they are subjected to, or propose a suitable AMP that will manage effects. Please also evaluate them for any plant specific operating experience at Pilgrim. If Entergy evaluates otherwise, please provide justification for why the above generic aging lessons learned recommended program need not be credited.

RAI 3.5.1-1

In LRA Table 3.5.2-6, PNPS has identified 30 line items that reference Table 3.5.1, item 3.5.1-39. For two of these line items, the LRA stated that loss of material of carbon steel fire hose reels and damper framing exposed to a "protected from weather" environment is managed using the Fire Protection Program. For the other 28 line items the LRA credited the Structures Monitoring Program for managing the aging effects of loss of material. However, the discussion column of LRA Table 3.5.1, line item 3.5.1-39 credits only the Structures Monitoring Program, and does not credit the Fire Protection Program. Furthermore, LRA Appendix B.1.13.1, Fire Protection Program description does not address hose reels or damper framing, but LRA Appendix B.1.13.2, Fire Water System Program description includes valves (dampers), and an enhancement to include inspection of hose reels.

Please clarify which is the correct program, Fire Protection or Fire Water System that should have been credited in LRA Table 3.5.2-6 for aging management of fire hose reels and damper housing; and justify why this program is not credited in the discussion column of LRA Table 3.5.1, item 3.5.1-39 or revise the LRA to include this program.

Enclosure

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF THE HISTORY OF ARTS

RESEARCH REPORT

The following report was prepared by the author for the Department of the History of Arts, University of Chicago, during the summer of 1964. It is based on a study of the records of the Department of the History of Arts, University of Chicago, from 1945 to 1964. The report is intended to provide a summary of the activities of the Department during this period, and to identify the major areas of research and teaching. The report is organized into three main sections: a description of the Department's activities, a list of the major areas of research and teaching, and a list of the major publications of the Department.

The Department of the History of Arts, University of Chicago, was founded in 1945. It is a department of the University of Chicago, and is located in the Divinity School. The Department is headed by the Department Head, and is composed of several faculty members and a number of graduate students. The Department's activities are primarily in the field of the history of art, and include research, teaching, and the publication of books and articles. The Department's major areas of research and teaching are in the history of art, and include the history of art, the history of art, and the history of art.

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cavitation due to flowing water is insignificant, nonetheless, the Structures Monitoring Program will confirm the absence of aging effects for PNPS group 6 concrete structures. However, there is no line item in any of the AMR results Tables 3.5.2-X where the LRA Table 3.5.1 line item 3.5.1-45 is referenced.

Please justify why there is no line item in LRA Tables 3.5.2-X where the LRA Table 3.5.1 line item 3.5.1-45 is referenced or revise the LRA to include this reference.

Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 15, 2006

LICENSEE: Entergy Nuclear Operations, Inc.

FACILITY: Pilgrim Nuclear Power Station

SUBJECT: SUMMARY OF PUBLIC AUDIT STATUS BRIEFING WITH ENTERGY NUCLEAR OPERATIONS, INC., ON LICENSE RENEWAL SCOPING AND SCREENING METHODOLOGY AND THE AGING MANAGEMENT PROGRAM AND THE AGING MANAGEMENT REVIEW AUDITS FOR THE PILGRIM NUCLEAR POWER STATION (TAC NO. MC9669)

The U.S. Nuclear Regulatory Commission (NRC) staff conducted a public audit status briefing meeting with Entergy Nuclear Operations, Inc. (Entergy). The public meeting was conducted on Wednesday, July 19, 2006, in the Duxbury Room at the Radisson Hotel Plymouth Harbor Ballroom, 180 Water Street, Plymouth, Massachusetts. The subject of the meeting was to summarize the staff's audit findings associated with the scoping and screening methodology and the aging management program (AMP) and aging management review (AMR) audits of the Pilgrim Nuclear Power Station license renewal application (LRA). Twenty-three people attended the meeting which included members of the NRC staff, Entergy and a few citizens from the town of Plymouth, MA (Enclosure). This was a Category 1 Meeting. The following is a summary of the meeting.

The Project Manager for the LRA provided an introduction and said that since May 2006, the staff conducted on-site audits on scoping and screening methodology, AMPs, AMRs and TLAAs on the information that Entergy submitted in the renewal application. One of the milestones of the project was to provide feedback on the ongoing review process. In fulfilling that objective, on July 19, 2006, the staff met with the applicant to discuss the status of the audits and also share the results with the public.

The team leader for the scoping and screening methodology audit presented his findings on the portion of his audit as follows. During the week of June 6-9, 2006, the staff conducted a scoping and screening methodology audit at the Entergy Pilgrim Nuclear Power Station. The audit activities included a detailed review of the scoping and screening methodology and implementation of that methodology for the evaluation of plant mechanical and electrical systems, as well as structures, in accordance with the requirements of 10 CFR 54.4(a) and 10 CFR 54.21, respectively. As a result of this audit, the staff gained valuable insights regarding the scoping and screening implementation processes and identified several areas where additional information will be required to complete the staff's final safety determination. At the end of the audit the staff needed additional information from the applicant and issued three requests for additional information. These related to (1) non-safety structure, system, and components (SSCs) affecting safety-related SSCs, (2) quality control requirements applied to certain AMP attributes, and (3) the evaluation of SSCs credited for design-basis events.

The team leader for the AMP/AMR audits presented his findings on the portion of his audits as follows. During the weeks of May 22-26, 2006, June 19-23, 2006 and July 17 and 18, 2006, staff conducted the AMP/AMR audits at the Entergy Pilgrim Nuclear Power Station. NRC performs audits early in the license renewal review process to evaluate whether the application is consistent with established guidance and NRC staff positions. The purpose of this audit status briefing was to summarize the audit findings and to provide the status of questions posed to the applicant during the audits. Pilgrim Nuclear Power Station submitted 38 AMPs and the safety audit team reviewed 37 of the programs. The remaining program was reviewed by NRC headquarters staff. In addition, the applicant added a new AMP on bolting integrity, which was not included in the original LRA. The audit team performed reviews on approximately 2800 components included in the various system that were scoped in the application. An AMR lists the component, what the component is made from, the environment the component is exposed to, the anticipated aging effect(s), and the AMP or programs that is credited to manage the aging effects during the period of extended operation. There were 329 staff questions submitted to the applicant and the answers to 328 of the questions were found to be acceptable and documented as a part of the audits. This document was made available at the public meeting for interested members of the public (ML061940175). The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html> on the NRC web site. Persons who do not have access to ADAMS, should contact the NRC's Public Document Room reference staff at 1-800-397-4209, or 301-415-4727, or by e-mail at pdr@nrc.gov. At the end of the audit the staff needed additional information from the applicant on the one remaining item and this was issued as request for additional information.

The public was invited to observe the meeting and had an opportunity to communicate with the NRC staff after the business portion, but before the meeting was adjourned. The staff also stayed behind and met with a few interested members of the public and addressed their specific questions personally. During the public question session one concerned citizen, Ms. Marie Fehlow, a resident of Plymouth, stated she had provided written comments on the public feedback form during the end-of-cycle meetings in 2004 and 2005, participated by the Senior Resident Inspector at the Pilgrim Nuclear Station. Although she requested on the forms that NRC contact her, she was never contacted. The senior resident inspector who was present for the July 19, 2006 meeting met with Ms. Fehlow after the formal meeting to apologize for the NRC's lack of response and obtained specifics on her concerns. Region I will be following-up with her on this matter further.



Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
List of Participants

cc w/encl: See next page

**LIST OF PARTICIPANTS FOR THE
PILGRIM ENVIRONMENTAL SCOPING MEETINGS**

July 19, 2006

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Ram Subbaratnam
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Peter Wen
Dan Hoang
Don Jackson
Mike Balduzzi
Ken Chang
Gary G. Young
David J. Lach
Bryan Ford
Greg Galletti
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Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 22, 2006

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601-1839

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address license Renewal Section 2.4, "Scoping and Screening Results: Structures."

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over the typed name.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION
PILGRIM LICENSE RENEWAL APPLICATION (LRA)
SECTION 2.4 SCOPING AND SCREENING RESULTS: STRUCTURES

Section 2.4.1 Primary Containment

RAI 2.4.1-1

Table 2.4-1, Primary Containment of the license renewal application (LRA) does not include drywell head closure bolts, backing plates, spring seals, and removable guard rings. These components have the intended function of pressure boundary and support for criterion (a)(1) equipment. The staff requests the applicant provide justification for not including them in the scope of license renewal.

RAI 2.4.1-2

Neither Table 2.4-1, Primary Containment, nor Table 2.4-2, Reactor Building, of the LRA incorporates refueling cavity seal components within the scope of license renewal. The proposed license renewal interim staff guidance LR-ISG-2006-01, "Plant Specific Aging Management Program for Inaccessible Areas of Boiling Water Reactor Mark 1 Steel Containment Drywell Shell," which was published in the Federal Register on May 9, 2006, stated that the most likely cause of corrosion of the drywell shell in the sand-pocket areas (near the bottom of the drywell), and in the spherical portion of the drywell at higher elevations, was the water in the gap between the drywell and the concrete shield, and the source of the water was noted as leakage through the seal between the drywell and the refueling cavity. Therefore, the staff requests the applicant include all the refueling cavity seal components within the scope of license renewal and provide a drawing that depicts the refueling cavity seal components.

RAI 2.4.1-3

Table 2.4-2, Reactor Building, of the LRA lists the biological shield wall concrete as a component within the scope of license renewal. Clarify if the Pilgrim Nuclear Power Station (Pilgrim) plant needs a cooling system to maintain the temperature of the biological shield wall concrete within its design limit temperatures. If yes, confirm that the cooling system is included within the scope of license renewal and list the system in Table 2.4-2.

RAI 2.4.1-4

Table 2.4-1, Primary Containment, of the LRA lists "Floor slabs, walls (EQ Zone 1.30, Drywell El. 9'-2")." It is unclear to the staff if the above referenced slab is the same as the one located at the elevation of the moisture barrier which serves as the interface between the drywell floor concrete slab and the drywell shell. Provide a drawing to depict the "Floor slabs, walls (EQ Zone 1.30, Drywell El. 9'-2"), and indicate whether all floor slabs and walls inside the primary containment are within the scope of license renewal.

ENCLOSURE



RAI 2.4.1-5

Table 2.4-1, Primary Containment, of the LRA does not include the reinforced concrete shield plugs that provide shielding over the top of the drywell. The staff requests the applicant provide justification for not including them in the scope of license renewal. Exclusion of the reinforced concrete shield plugs from the scope of license renewal may lead to long-term unmanaged degradation of the plugs (e.g., full sectional concrete cracking, rebar corrosion, loss of bond, partial spalling or cracking of concrete due to handling, loss of load carrying capacity of plug attachments, etc.) with a seismic II/I implication potentially affecting the structural integrity of the drywell head.

RAI 2.4.1-6

Table 2.4-1, Primary Containment, of the LRA only lists the reactor vessel and drywell bellows. Confirm that items such as backing plates, spring seals, and removable guard rings are within the scope of license renewal and list the items in Table 2.4-1.

Section 2.4.3 Intake Structure

RAI 2.4.3-1

Table 2.4-3, Intake Structure, of the LRA does not include intake structure components specific to Pilgrim, such as sluice gates, trash racks, traveling screens, cranes and water proofing membranes, etc. within the scope of license renewal. As applicable, the staff requests the applicant provide justification for not including them in the scope of license renewal.

Section 2.4.4 Process Facilities

RAI 2.4.4-1

Section 2.4.4, Process Facilities, of the LRA under Main Stack and Filter Building states that "The main stack is a safety-related and seismic Class I structure but is not designed to withstand tornado loadings since it is located sufficiently far from other seismic Class I structures to preclude interaction." The staff needs additional information regarding the potential interaction between some seismic Class II structure, system, and components (SSCs) and the tornado-induced failure of the main stack. Specifically, the licensee is requested to confirm that appropriate measures have been taken to preclude potential interactions between the main stack and some nearby seismic Class II SSCs whose failure might have adverse effects on seismic Class I SSCs.

Section 2.4.5 Yard Structures

RAI 2.4.5-1

Table 2.4-5, Yard Structures, of the LRA does not include, the plant system portion of switchyard circuit breakers, transformers, transmission towers, and transmission tower foundations. As part of the list to comply with interim staff guidance(ML020920464) concerning scoping of offsite power systems necessary to support the Station Blackout Rule (10 CFR 50.63), the staff requests the applicant include these components in the scope of license

1

1. The first part of the paper discusses the importance of the study and the objectives of the research. It also provides a brief overview of the methodology used in the study.

2. The second part of the paper presents the results of the study. It includes a detailed description of the data collected and the analysis performed. The results are presented in a clear and concise manner, with appropriate use of tables and figures.

3. The third part of the paper discusses the implications of the study. It highlights the key findings and their significance for the field of research. It also provides recommendations for future research and practice.

4. The fourth part of the paper concludes the study. It summarizes the main points of the paper and provides a final statement on the importance of the research. It also includes a list of references and a list of figures.

5. The fifth part of the paper is a list of references. It includes a list of books, articles, and other sources used in the study. It is formatted according to the requirements of the journal.

renewal. The ADAMS Public Electronic Reading Room is accessible at <http://www.nrc.gov/reading-rm/adams.html> on the NRC web site. Persons who do not have access to ADAMS, should contact the NRC's Public Document Room reference staff at 1-800-397-4209, or 301-415-4727, or by e-mail at pdr@nrc.gov.

Section 2.4.6 Bulk Commodities

RAI 2.4.6-1

Table 2.4-6, Bulk Commodities, of the LRA provides a list of bulk commodities for Pilgrim. The location of each commodity is unclear to the staff. The staff requests the applicant describe all commodities on the list as well as provide a comprehensive listing of components and locations for each commodity.

RAI 2.4.6-2

Table 2.4-6, Bulk Commodities, of the LRA lists "Insulation" with its intended functions. It is unclear to the staff why "Support for Criterion (a)(1) equipment" is not part of the intended functions when Table 2.0-1 defines the intended function of insulation as "provide insulating characteristics to reduce heat transfer," which is meant to apply to safety related and non-safety related components. The staff requests the applicant provide additional information on insulation and a list of in-scope components that have insulation included with their intended functions.

RAI 2.4.6-3

Table 2.4.6 lists steel "Flood curbs" as a component with intended functions for flood barrier and shelter or protection, and another component concrete "Flood curbs" with an intended function for flood barrier. The staff requests the applicant provide clarifications for the two different components by listing all structural members (elements) under each component.

Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 23, 2006

LICENSEE: Entergy Nuclear Operations, Inc

FACILITY: Pilgrim Nuclear Power Station

SUBJECT: SUMMARY OF FOLLOW UP CONFERENCE CALL WITH ENTERGY NUCLEAR OPERATIONS, INC, TO DISCUSS THE SEVERE ACCIDENT MITIGATION ALTERNATIVES REQUESTS FOR ADDITIONAL INFORMATION FOR PILGRIM NUCLEAR POWER STATION (TAC NO. MC9676)

On August 10, 2006, the U.S. Nuclear Regulatory Commission (NRC) staff and its contractor from Information Systems Laboratory conducted a conference call (teleconference) with representatives from Entergy Nuclear Operations, Inc. (Entergy), to discuss the Pilgrim Nuclear Power Station (Pilgrim) severe accident mitigation alternatives (SAMA) requests for additional information (RAIs) (ML061440026). The NRC staff formally sent the SAMA RAIs to Entergy by letter dated May 22, 2006, in support of the environmental review of the Pilgrim application for license renewal. The teleconference was held to discuss the RAI responses submitted by Entergy on July 5, 2004 (ML061930418). The enclosure contains a listing of teleconference participants.

Entergy has agreed to submit a supplemental response to the NRC, as a result of the teleconference. No staff decisions were made during the teleconference.

A handwritten signature in black ink, appearing to read "Alicia Williamson", is written over a horizontal line.

Alicia Williamson, Project Manager
Environmental Branch B
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
List of Teleconference Participants

cc w/encl: See next page

LIST OF PARTICIPANTS FOR FOLLOW-UP CONFERENCE CALL
WITH ENTERGY NUCLEAR OPERATIONS, INC.,
TO DISCUSS THE SEVERE ACCIDENT MITIGATION ALTERNATIVES
REQUESTS FOR ADDITIONAL INFORMATION
FOR PILGRIM NUCLEAR POWER STATION

August 10, 2006

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Enclosure

Pilgrim Nuclear Power Station

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Pilgrim Nuclear Power Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 25, 2006

LICENSEE: Entergy Nuclear Operations, Inc.

FACILITY: Pilgrim Nuclear Power Station

SUBJECT: SUMMARY OF CONFERENCE CALL ON AUGUST 1, 2006 WITH ENTERGY NUCLEAR OPERATIONS, INC., ON POTENTIAL TIME LIMITED AGING ANALYSIS QUESTIONS ON THE PILGRIM LICENSE RENEWAL APPLICATION (TAC NO. MC9669)

The U.S. Nuclear Regulatory Commission staff conducted a conference call with Entergy Nuclear Operations, Inc. (Entergy or the applicant), on potential time-limited aging analysis (TLAA) questions on the Pilgrim License Renewal Application (LRA). The conference call was conducted on Tuesday, August 1, 2006, between 12:30 p.m. and 1:30 p.m. at 11555 Rockville Pike, Rockville, MD 20852. The list of participants is shown in the enclosure. The following is a summary of the meeting.

The Project Manager for the LRA provided an introduction and said that there were a few remaining questions from the staff's previous Generic Aging Lessons Learned audit conducted at the applicant site during May - July, 2006. These were related to the following three unresolved audit questions that could become potential TLAA's: (i) Control rod drive nozzle-to-end cap weld, (ii) Reactor recirculation nozzle thermal sleeves, and (iii) N2F reactor recirculation nozzle. At the end of the conference call it was resolved that with the exception of item (ii), the other two items were TLAA's. It was decided during the call that a request for additional information would follow in the future.

The applicant had an opportunity to comment on the meeting summary.

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over the typed name.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
List of Participants

cc w/encl: See next page

**LIST OF PARTICIPANTS FOR TELEPHONE CONFERENCE CALL
TO DISCUSS THE PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION**

August 1, 2006

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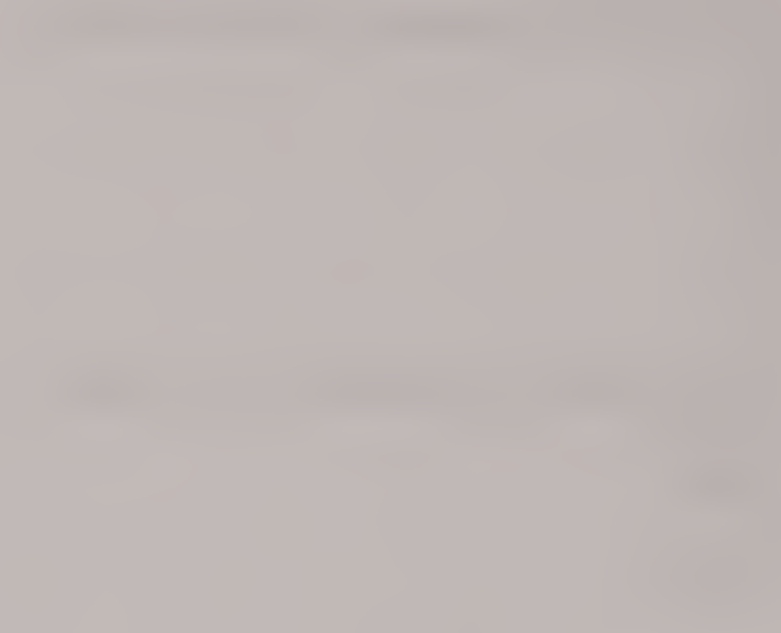
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ENCLOSURE

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UNITED STATES
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WASHINGTON, D.C. 20555-0001

September 7, 2006

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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC NO. MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc., submitted an application pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR Part 54), to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address License Renewal Section: 4.3.1.2 Reactor Vessel Internals.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or by e-mail at RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over the typed name.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

[The page contains extremely faint, illegible text, likely bleed-through from the reverse side. The text is organized into several paragraphs and possibly a table or list structure, but the content cannot be discerned.]

REQUESTS FOR ADDITIONAL INFORMATION
PILGRIM LICENSE RENEWAL APPLICATION (LRA)
SECTION: 4.3.1.2 REACTOR VESSEL INTERNALS

4.3.1.2 Reactor Vessel Internals

RAI 4.3.1.2-1

Control rod drive (CRD) return line nozzle-to-end cap weld: Regarding the CRD return line nozzle-to-end cap weld repair, your Project Report LRPD-06, "Pilgrim NPS License Renewal Project - Time-Limited Aging Analyses, Mechanical Fatigue," Response 2.4 refers to Relief Request PRR-36 and concludes, "This relief did not involve any analyses based on time-limited assumptions and therefore is not a TLAA." PRR-36 was submitted by letters dated October 1, 3, and 8, 2004, and July 12, 2004, for relief from certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) requirements pertaining to the repair of the nozzle-to-end cap weld with a detected flaw and the associated non-destructive examinations. Alternatively, PRR-36 proposed to use ASME Code Case N-504-2, "Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping," with modifications to perform the repair. The request was approved in a safety evaluation (SE) dated February 25, 2005. ASME Code Case N-504-2 (g)(2) requires a flaw evaluation be performed on the repaired component such that "The evaluation should demonstrate that the requirements of IWB-3640...are satisfied for the design life of the repair, considering potential flaw growth due to fatigue and the mechanism believed to have caused the flaw. The flaw growth evaluation shall be performed in accordance with Appendix C." Explain how Entergy meets the ASME Code Case N-504-2 requirement on performing a flaw evaluation that considers fatigue and the mechanism believed to have caused the flaw. If applicable, you may provide a document showing that the weld overlay region adjacent to the interface is in the compressive stress zone.

RAI 4.3.1.2-2

Reactor recirculation nozzle thermal sleeves regarding the flaws on reactor recirculation nozzle thermal sleeves, LRPD-06 Response 2.4 refers to a flaw growth analysis in NEDC-30730 and concludes, "The NRC reviewed and accepted the analysis as documented in an SER (Ref. 4.2.21). As this analysis is only based on 18 months, it is not a TLAA." The cited SE was issued on December 4, 1984. As you stated, the crack growth analysis is for 18 months. One of the six criteria specified in 10 CFR 54.3(a) for classifying an analysis as a TLAA is the analysis "[i]nvolve time-limited assumptions defined by the current operating term, for example, 40 years." The meaning of a crack growth analysis based on 18 months is that the structural integrity of reactor recirculation nozzle thermal sleeves is not only a concern for the extended period of operation but also a concern for the remaining period of operation under the current 40-year license. Therefore, Entergy needs to consider this as a TLAA and address the following:

For the License Renewal Application:

- (1) Confirm whether Report PMA86-07, "Pilgrim Nuclear Power Station Recirculation Inlet Thermal Sleeve Mock Up Fabrication and Evaluation," dated October 1986 had been reviewed by NRC staff.

ENCLOSURE

THE HISTORY OF THE CITY OF BOSTON

BY SAMUEL JOHNSON

VOLUME I

The city of Boston, situated on a neck of land between the harbor and the bay, was first settled by a small number of Englishmen in the year 1630. The settlement was made by a company of men, who were sent out by the Massachusetts Bay Company, to establish a colony in New England. The first settlers were John Winthrop, the governor, and a number of his associates. They arrived in the harbor of Boston on September 8, 1630, and landed on the shore. The first building erected was the town hall, which was completed in the year 1631. The city grew rapidly, and by the year 1640 it had become one of the most important cities in New England. In the year 1642, the city was attacked by a large force of Indian warriors, but they were repulsed. In the year 1643, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1650 it had become one of the largest cities in New England. In the year 1651, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1660 it had become one of the largest cities in New England. In the year 1661, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1670 it had become one of the largest cities in New England. In the year 1671, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1680 it had become one of the largest cities in New England. In the year 1681, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1690 it had become one of the largest cities in New England. In the year 1691, the city was again attacked, but the Indians were again repulsed. The city continued to grow, and by the year 1700 it had become one of the largest cities in New England.

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- (2) Identify the SE which accepts use of hydrogen water chemistry as the mitigating method and as the basis for Entergy to operate with the flaws on the thermal sleeves beyond 1987.
- (3) Provide an analysis of the inspection results on these thermal sleeves obtained from 1987 to date.
- (4) Provide the end-of-extended-period-of-operation (60 years) flaw length of the circumferential through-wall flaw which was 32 percent circumference in 1987 (per the December 4, 1984, SE for the worst flaw among the detected recirculation nozzle thermal sleeve cracks) and perform a stability analysis for this flaw.
- (5) If the stability analysis of effort (4) shows that the predicted end-of-extended-period-of-operation through-wall flaw length does not meet the ASME Code Section XI margin, provide an impact evaluation on operation and structural integrity of other components due to a broken thermal sleeve piece of a reasonable size.
- (6) Provide an inspection plan for these detected thermal sleeve flaws in the extended period of operation.

For current operation till the end of the 40-year operation:

- (7) Discuss the adequacy of the inspection plan for recirculation nozzle thermal sleeves for the remaining period of 40-year operation.
- (8) Provide the end of the 40-year operation flaw length of the circumferential through-wall flaw which was 32 percent circumference in 1987 and perform a stability analysis for this flaw.

Pilgrim Nuclear Power Station

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1. The first part of the paper discusses the importance of understanding the underlying mechanisms of the observed phenomena.

2. The second part of the paper focuses on the development of a theoretical framework that can explain the observed results.

3. The third part of the paper presents the results of the experiments conducted to test the proposed theoretical framework.

4. The fourth part of the paper discusses the implications of the findings and suggests directions for future research.

5. The fifth part of the paper concludes the study and summarizes the main findings.

6. The sixth part of the paper provides a detailed discussion of the limitations of the study and the potential sources of error.

7. The seventh part of the paper discusses the broader context of the study and its relevance to the field of research.

8. The eighth part of the paper discusses the potential applications of the findings in practical settings.

9. The ninth part of the paper discusses the ethical considerations of the study and the responsible use of the findings.

10. The tenth part of the paper discusses the future prospects of the research and the potential for further discoveries.

11. The eleventh part of the paper discusses the role of the researcher in the scientific process and the importance of transparency.

12. The twelfth part of the paper discusses the importance of collaboration and the sharing of knowledge in the scientific community.

13. The thirteenth part of the paper discusses the impact of the study on the field of research and the potential for future work.

14. The fourteenth part of the paper discusses the overall significance of the study and the contribution it makes to the field.

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 8, 2006

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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC NO. MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc., submitted an application pursuant to Title 10 of the *Code of Federal Regulations* 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address Sections 3.2 Engineered Safety Features.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
As Stated

cc w/encl: See next page

REQUESTS FOR ADDITIONAL INFORMATION (RAIs)
PILGRIM NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SECTIONS
3.2 ENGINEERED SAFETY FEATURES SYSTEMS

3.2 Engineered Safety Features Systems

RAI 3.2.1 Piping of the Reactor Core Isolation Cooling System is subject to flow accelerated corrosion.

The applicant in LRA Table 3.2.1-19 - engineered safety feature (ESF) and Table 3.2.1 credit the plant-specific Periodic Surveillance and Preventive Maintenance Program for the management of loss of materials (wall thinning). The GALL report recommends using the Flow-Accelerated Corrosion Program, XI.M17, to manage wall thinning. The Periodic Surveillance and Preventive Maintenance Program provides for inspection for material loss (wall thinning) every 5 years but no Monitoring and Trending activities to predict areas of high wall thinning rates or for trending of thinning as does XI.M17. Please provide justification for not providing for monitoring and trending of wall thinning for reactor core isolation cooling (RCIC) piping.

RAI 3.2.2

The applicant in Table 3.2.1 Item 18 of the PNPS LRA stated that none of the ESF system components are within the scope of the BWR Stress Corrosion Cracking Program. Please provide the details that justify this statement.

ENCLOSURE

THE HISTORY OF THE CITY OF BOSTON

FROM THE FIRST SETTLEMENT TO THE PRESENT TIME

BY
JOSEPH NEALE, ESQ.
OF THE BARR, AT THE MIDDLESEX COURT-HOUSE, LONDON.
IN TWO VOLUMES.
LONDON: PRINTED BY J. JOHNSON, ST. PAUL'S CHURCH-YARD, 1796.

Vol. I. C

Pilgrim Nuclear Power Station

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WASHINGTON, D.C. 20555-0001

September 8, 2006

Mr. Michael Kansler
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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION
(TAC NO. MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc., submitted an application pursuant to Title 10 of the *Code of Federal Regulations* 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station, for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information on Time Limited Aging Analysis of Reactor Vessel Internals in License Renewal Section: 4.2.1.

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or by e-mail at RXS2@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Subbaratnam", is written over a horizontal line.

Ram Subbaratnam, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:
Requests for Additional Information

cc w/encl: See next page

REQUESTS FOR ADDITIONAL INFORMATION
PILGRIM LICENSE RENEWAL APPLICATION (LRA)
TIME-LIMITED AGING ANALYSIS (TLAA) OF REACTOR VESSEL (RV) INTERNALS
SECTION: 4.2.1 NEUTRON FLUENCE

RAI 4.2.2-1

Section 4.2.2 of the Pilgrim Nuclear Power Station (PNPS) License Renewal Application (LRA), "Pressure-Temperature [P-T] Limits," states that in a license amendment request dated December 4, 2002, PNPS requested to use the present P-T limit curves through the end of operating cycle 16, which corresponds to approximately 23 effective full power years (EFPY) of facility operation. The end of operating cycle 16 is expected to occur in 2007. Section 4.2.2 also states that, in this December 4, 2002 submittal, PNPS committed to develop and submit updated P-T limit curves and revised fluence calculations based on an NRC-approved calculation method that adheres to Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," prior to the end of operating cycle 16. License Amendment 197 granted this request in 2003. Section 4.2.2 then states that recent fluence calculations that were done per RG 1.190 confirm that the fluence for 54 EFPY is less than the fluence used to calculate the P-T limits that were approved for use only through the end of operating cycle 14. Based on the above statements, you conclude that the current Technical Specification (TS) P-T limit curves remain valid for the period of extended operation.

- (a) Please confirm whether the P-T limit curves currently established in the PNPS TSs expire at the end of operating cycle 16 (23 EFPY).
- (b) Please explain why the recent fluence calculations that were done per RG 1.190 confirm that the fluence for 54 EFPY is less than the fluence used to calculate the P-T limits that were approved for use through the end of cycle 14. Explain how this information was used to determine that the existing P-T limits remain valid for the period of extended operation.
- (c) The staff does not require the P-T limit curves for the extended period of operation to be submitted as part of the applicant's LRA for this time-limited aging analysis (TLAA). However, the staff does require NRC approval of the P-T limit curves for the extended period of operation prior to the expiration of the P-T limit curves for 32 EFPY. Please state when you intend to submit P-T limit curves for NRC approval for the extended licensed period of operation (54 EFPY).

RAI 4.2.4-1

Table 4.2-2 of the PNPS LRA lists initial RT_{NDT} values for the PNPS RV beltline materials. The initial RT_{NDT} values for Lower Intermediate Shell Plate G-3108-1 (Heat No. C-2921-2) and Lower Intermediate Shell Plate G-3108-3 (Heat No. C-2945-2) are less conservative than the corresponding initial RT_{NDT} values established in the NRC staff's reactor vessel integrity database (RVID) for these materials. Section 4.2.4 of the PNPS LRA states that, "initial RT_{NDT} values are from report SIR-00-82, which was submitted in 2001 as part of the PNPS P-T limit change request (Reference 4.2-5)." Reference 4.2-5 points to the April 13, 2001, license amendment issued by the NRC authorizing revised P-T limit curves.

ENCLOSURE

1. Introduction

2. Methodology

3. Results

4. Discussion

5. Conclusion

6. References

7. Appendix

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44. Data Availability

45. Ethics Approval

Please provide additional information that points to where the NRC staff authorized the use of the specific initial RT_{NDT} values listed in Table 4.2-4 for determining the adjusted reference temperature (ART) values for the PNPS reactor vessel (RV) beltline materials.

RAI 4.2.4-2

The %Cu and chemistry factor (CF) values for Lower Shell Axial Welds 2-338A, B, and C from LRA Table 4.2-2 are less conservative than the corresponding %Cu and CF values that were established in the staff's RVID for these welds. Please provide the following information:

- (a) verification of whether the %Cu and CF values listed in Table 4.2-1 are valid for the above welds,
- (b) justification for the use of these chemistry data for the above welds, including the source of the data, and a specific reference for the documentation/analysis demonstrating that these chemistry data represent the best available estimate of the weld chemistries.

RAI 4.2.4-3

Lower Intermediate / Upper Shell Circumferential Weld 3-339B (Heat No. 13253) is listed in the NRC staff's RVID. However this weld is not represented in LRA Table 4.2-2 or (LRA Table 4.2-1). Please resolve this discrepancy.

RAI 4.2.5-1

Section 4.2.5 of the PNPS LRA addresses the TLAA for the RV Circumferential Weld Examination Relief. Table 4.2-3 of the LRA compares the limiting RV circumferential weld parameters for PNPS to those used in the NRC evaluation of the BWRVIP-05 report, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations." The PNPS limiting RV circumferential weld parameters are based on Lower Intermediate / Lower Shell Circumferential Weld 1-334 (Heat No. 21935), which is the only circumferential weld represented in LRA Table 4.2-2. However, as discussed in RAI 4.2.4-3, the NRC staff's RVID also lists Lower Intermediate / Upper Shell Circumferential Weld 3-339B (Heat No. 13253) as one of the RV welds for PNPS. Furthermore, the chemistry and CF data for this weld are more limiting than for the Circumferential Weld 1-334. Please explain why this TLAA did not address Lower Intermediate / Upper Shell Circumferential Weld 3-339B (Heat No. 13253).

RAI 4.2.5-2

The NRC staff requires that a request for relief from the American Society of Mechanical Engineer Boiler and Pressure Vessel Code (ASME Code) RV circumferential shell weld examination requirements be submitted prior to the beginning of the extended period of operation. Please state whether you intend to apply for relief from the ASME Code RV circumferential weld examination requirements for the extended licensed period of operation. State when you plan to submit this relief request.

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

which is the subject of the present paper. In the second part we shall consider the case of a linear system of equations.

2. Let us consider the system of equations

where A is a matrix of order n and b is a vector of order n . We shall assume that the matrix A is nonsingular.

3. In the case of a linear system of equations the problem of the existence of solutions is equivalent to the problem of the solvability of the system

where A is a matrix of order n and b is a vector of order n . We shall assume that the matrix A is nonsingular.

4. In the case of a linear system of equations the problem of the existence of solutions is equivalent to the problem of the solvability of the system

where A is a matrix of order n and b is a vector of order n . We shall assume that the matrix A is nonsingular.

5. In the case of a linear system of equations the problem of the existence of solutions is equivalent to the problem of the solvability of the system

where A is a matrix of order n and b is a vector of order n . We shall assume that the matrix A is nonsingular.

RAI 4.2.5-3

In the July 28, 1998 SER on BWRVIP-05, the NRC staff concluded that examination of the RV circumferential shell welds would need to be performed if the corresponding volumetric examinations of the RV axial shell welds revealed the presence of an age-related degradation mechanism. Confirm whether or not previous volumetric examinations of the RV axial shell welds have shown any indication of cracking or other age-related degradation mechanisms in the welds.

RAI 4.2.6-1

The limiting axial weld failure probability calculated by the NRC staff in the BWRVIP-05 SER is based on the assumption that "essentially 100 percent" (i.e., greater than 90 percent) examination coverage of all RV axial welds can be achieved in accordance with ASME Code, Section XI requirements.

State whether your ISI examinations achieve "essentially 100 percent" (i.e., greater than 90 percent) overall examination coverage for the RV axial welds for the duration of the current licensed operating period. If less than 90 percent overall examination coverage is achieved for the RV axial welds, revise this TLAA to account for the effects of the limited scope examination coverage.

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